

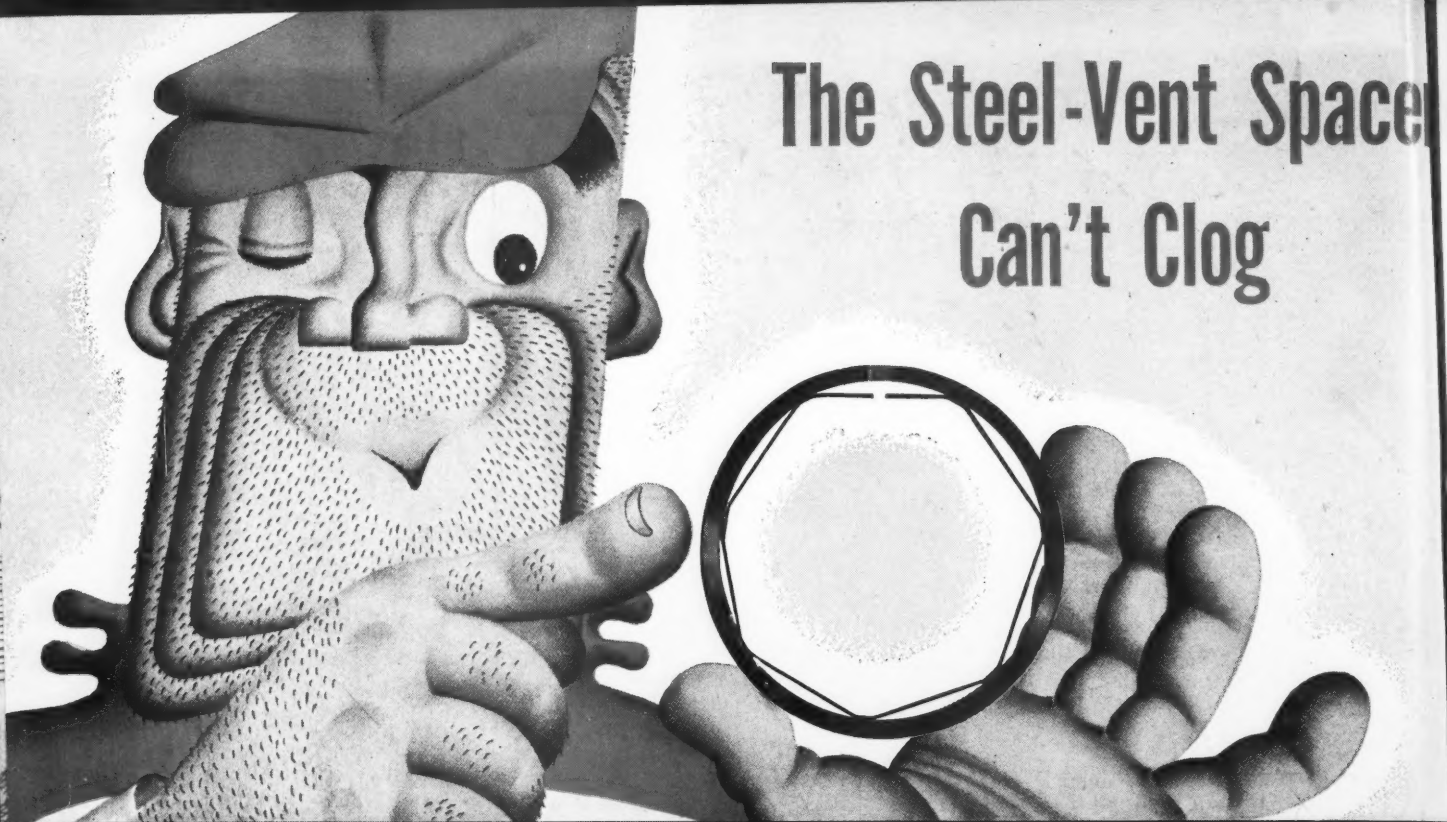
TECHNOLOGY DEPARTMENT

MOTOR AGE

OCTOBER 1947
WILSON PUBLICATION

PUBLIC LIBRARY
NOV 7 - 1947
DETROIT





The Steel-Vent Spacer Can't Clog

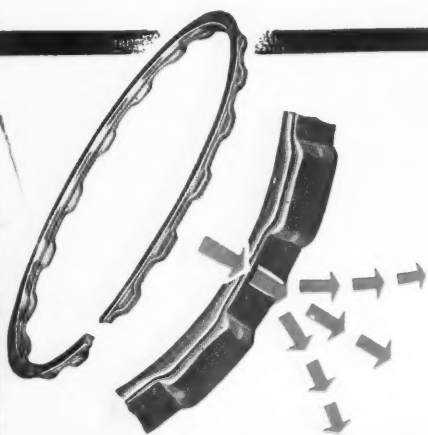
NON-CLOGGING SPACER HELPS GIVE STEEL-VENT ITS LONG EFFICIENT LIFE

● Thousands of miles after other types of oil rings have clogged-up and ceased to function, Steel-Vents will still be delivering the same generous wall lubrication; still controlling the surplus oil and returning it to the crankcase.

Why? Because Steel-Vents can't clog. The

spacer, with wide straight-through side-openings, operates against a moving segment. Thus sludge and carbon formations are constantly broken up. Clogging is impossible! Remember this, on your next job. It's equally important in rebored, resleeved or tapered-cylinder jobs.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
HASTINGS LTD., TORONTO



Oil flows freely through the wide vents of the spacer. The spacer "breathes" as it works against the moving segment, and automatically cleanses itself of sludge and carbon. It can't clog!

TOUGH BUT OH SO GENTLE

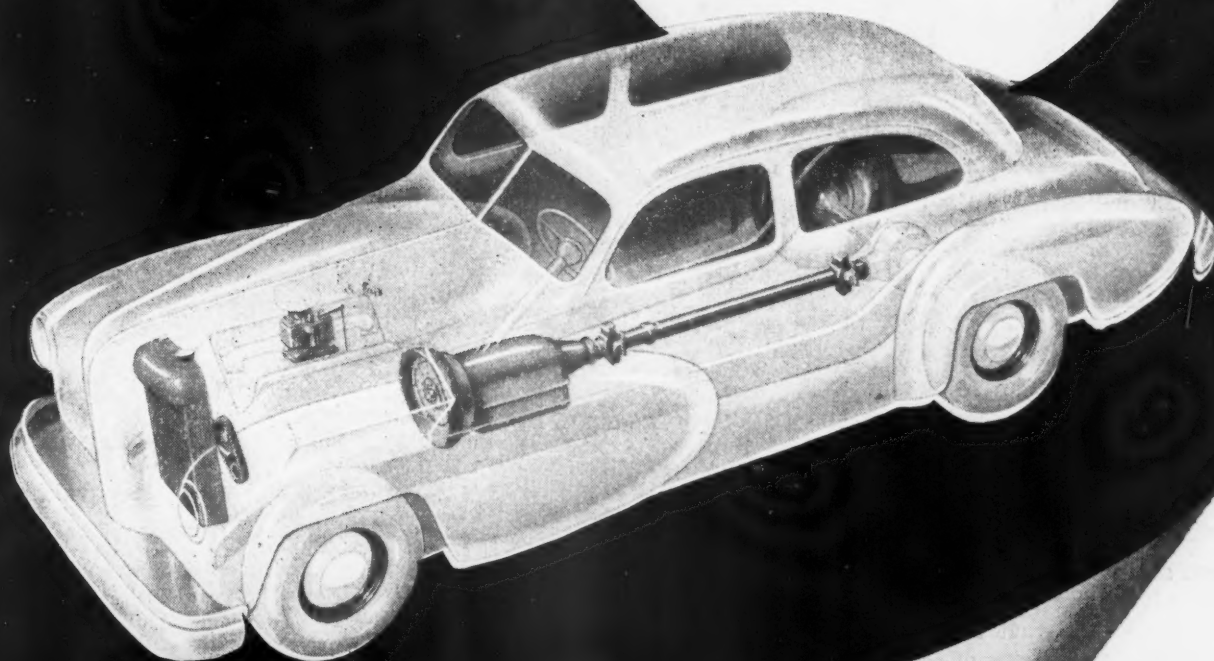


HASTINGS

STEEL-VENT PISTON RINGS

Generous Wall Lubrication
Always Under Control

**19 of the 20
makes of
motor cars embody essential
parts made by
BORG-WARNER!**



**TRANSMISSIONS
TIMING CHAINS
OVERDRIVES
SYNCHRONIZERS
CLUTCHES**

**UNIVERSAL JOINTS
DRIVE SHAFTS
CARBURETORS
RADIATORS
TAPERED WHEEL DISCS**



Executive Offices, Chicago. These units form Borg-Warner: BORG & BECK • BORG-WARNER INTERNATIONAL
BORG WARNER SERVICE PARTS • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR STOVE • INGERSOLL STEEL
LONG MANUFACTURING • LONG MANUFACTURING CO., LTD. • MARBON • MARVEL-SCHLEBLER CARBURETOR • MECHANICS
UNIVERSAL JOINT • MORSE CHAIN • MORSE CHAIN CO., LTD. • NORGE • NORGE-HEAT • NORGE MACHINE PRODUCTS
PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • SUPERIOR SHEET STEEL DIVISION • WARNER AUTOMOTIVE
PARTS • WARNER GEAR • WARNER GEAR CO., LTD. • WISCONSIN TRANSMISSION



Texaco Dealers are "on the button"

MILLIONS of car owners all over the U.S.A. are about to get an urgent reminder that now's the time for a Texaco fall check-up.

This unusual advertisement in the leading magazines will be backed up with the same striking illustrations on more than 10,000 billboards from coast-to-coast ... plus fall "button up" reminders to millions of Texaco Star Theater radio listeners every Sunday night.

So you see how Texaco wraps up an advertising theme into one big, powerful and timely sales push. It's just one of the many reasons why *Texaco Dealers are such busy dealers!*

THE TEXAS COMPANY

Button up for Winter

... with a **TEXACO** Fall Check-up!

Button up **FOR COMFORT** ... Enjoy that cushiony feeling as you drive. Get long-lasting chassis lubrication with Marfak, the tough "stick-to-it" lubricant. Applied by chart, never by chance.

Button up **FOR POWER** ... Keep your engine "right on the button." Change now to New and Improved Havoline, the modern motor oil. It gives you quick starts and livelier power because it **CLEANS** as it lubricates.

Button up **FOR SAFETY** ... Your Texaco Dealer will give your car a thorough inspection ... and the services it needs to protect it against winter. He'll provide anti-freeze protection ... and gladly check your battery, spark plugs, and tires. You'll get a real "buttoned-up" job. Drive in today.

THE TEXAS COMPANY
TEXACO DEALERS IN ALL 48

TEXACO
REG TM

TUNE IN... Texaco Star Theater presents the Tony Martin show every Sunday night. See newspaper for time and station.

*A Great Line-up
for*
TEXACO DEALERS

Sky Chief and **FIRE-CHIEF** GASOLINES
HAVOLINE and TEXACO MOTOR OILS • MARFAK
CHASSIS LUBRICATION • REGISTERED REST ROOMS

TUNE IN ... Texaco Star Theater presents the Tony Martin show every Sunday night. See newspaper for time and station.

3 BLADED PROP

Permatex Aviation Form-A-Gasket has 3 PROPERTIES of equal importance!

1... LUBRICATION

When Aviation Form-A-Gasket is freshly applied, close fitting connections are easy to tighten up... all the way!

2... SEALING

Aviation Form-A-Gasket quickly changes to a tacky paste that makes assemblies leak-proof to all lubricants, fuels and cooling solutions. The seal remains pliable... connections are easy to adjust or disassemble!

3... PROTECTION

Aviation Form-A-Gasket prevents corrosion and "freezing" of all metal parts used in modern engine assemblies... because an applied film seals out all air and moisture!

Will not run at 400° above
... nor become brittle at 70° below!



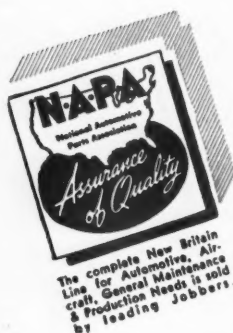
PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

You've never
handled a tool
like this new
RATCHET!

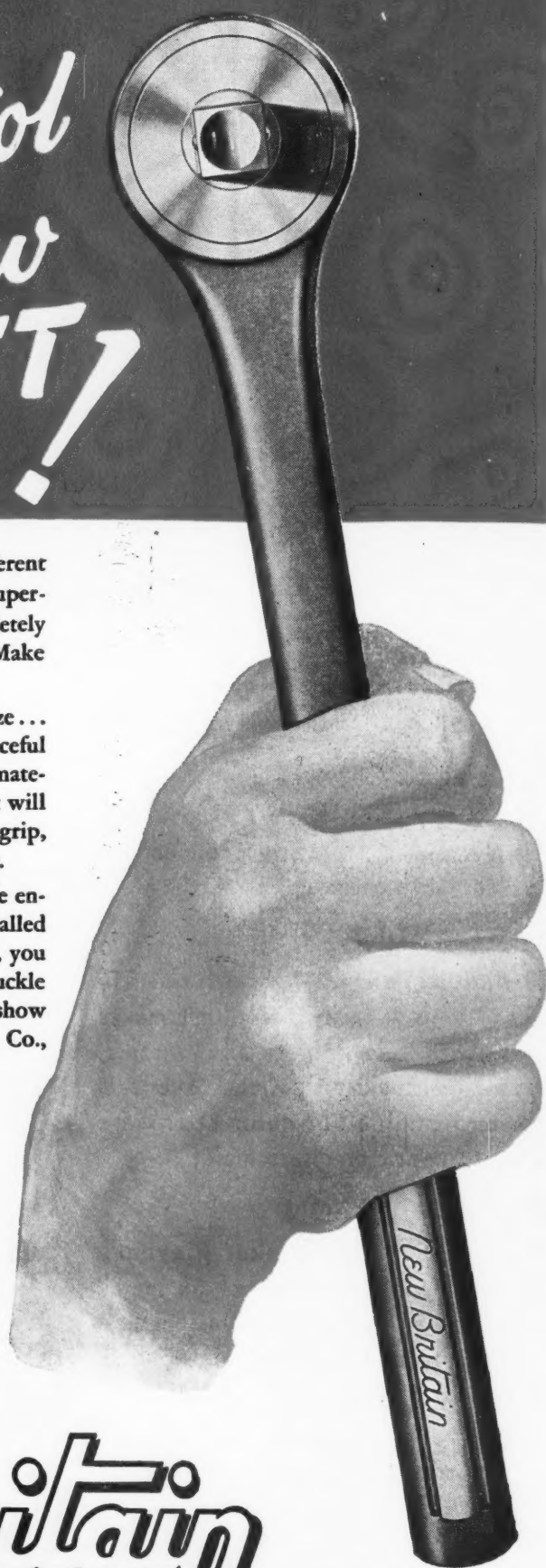
Pick it up! Grip it! Heft it! There's something *really* different about this new RATCHET! Lightweight, bulk-free, super-strong—it's another member of this famous Line, completely redesigned to give you—Mechanics' Hand Tools that Make Money.

Note that slim OVAL handle and reduced head size... every bit as compact as it looks. But, don't let that graceful slimmness fool you... *this Tool is stronger than ever!* LESS material, scientifically reshaped, gives MORE strength. And, it will go places no other ratchet ever fit before. The new oval grip, too, fits your hand *naturally*—more securely, less tiring.

Strengthened, lightened, streamlined for action—the entire New Britain Line has been re-engineered for unrivalled utility! Where the going is tough in the tightest spots, you can count on this Greater Strength—Better Fit. It's knuckle and job insurance for you!... ask your NAPA Jobber to show you this redesigned Line. The New Britain Machine Co., New Britain, Conn.



Excess material, top and bottom in old round shape, did little or no work. Removing this surplus greatly reduces weight and bulk. Very slight reinforcement added to each side of new oval shape—in direction of push and pull—develops amazing new strength at less weight.



New Britain

GREATER STRENGTH • BETTER FIT **HAND TOOLS**

"My Jobber Can Restore

COLLAPSED PISTONS..."



The revolutionary Moog Piston Expanding Method restores collapsed pistons, all types, permanently and economically.

Here is an accurate, simple, fast method of reconditioning worn pistons. Your Moog jobber can now give you this modern service. Ask him today.

With Moog X-Plus Piston Rings and the Moog Piston Expanding Method you have the *right combination* to put Full Power back into worn motors and eliminate costly comebacks.

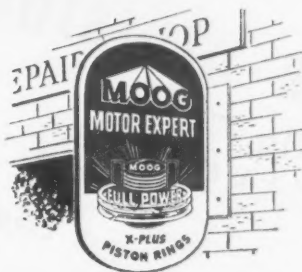
MOOG PISTON RING CO.

Division: MOOG INDUSTRIES, INC.

ST. LOUIS 14, MO.

BE A MOOG MOTOR X-PERT

and give Full Power
Reconditioning with
America's fastest
growing ring line.



*Backed by 10,000 Mile
Ring and Labor Guarantee*

COPYRIGHT 1947 M. I. I.

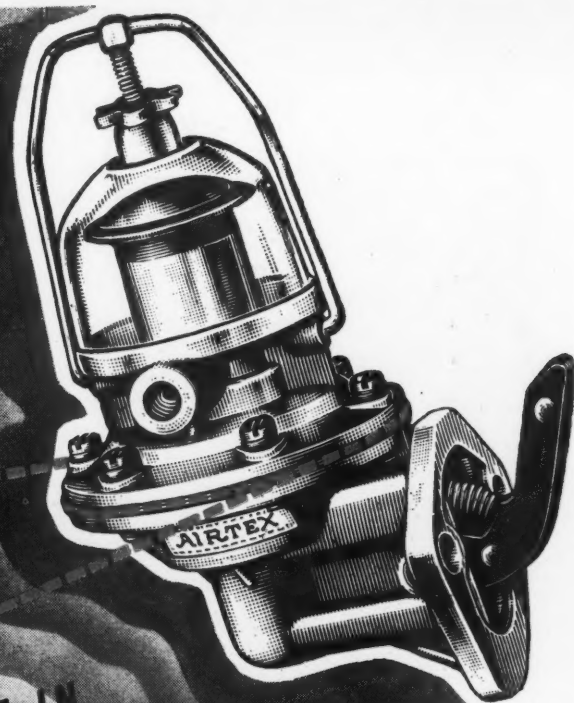
OCTOBER, 1947

When writing to advertisers please mention Motor Age

5

MOTOR AGE, Vol. LXVI, No. 11. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries, \$2.00 per year. Canadian and foreign, \$3.00 per year; single copies, 25 cents.

OVER 75,000,000
FUEL PUMP
PULSATIONS
without a CRACK
or PUNCTURE
in this DIAPHRAGM



STAMINA AND QUALITY ARE BUILT IN

AIRTEX

FACTORY TESTED

FUEL PUMPS

Assembled with AIRTEX Diaphragms
Guaranteed for 50,000 Miles

Almost incredible that a flexible diaphragm can take so much punishment. Yet tests repeatedly prove AIRTEX outlasts its 50,000-mile guarantee. In every detail of construction, material and workmanship AIRTEX Fuel Pumps are built for stamina.

AIRTEX AUTOMOTIVE DIVISION
Chefford Master Mfg. Co., Inc.
FAIRFIELD, ILLINOIS

YOUR PROFITS
CLIMB WITH THE
AIRTEX LINE



ORDER FROM
YOUR JOBBER

Sell an AIRTEX Gasoline Filter with Pulsation DAMPER, with every carburetor or fuel pump job

You get
COMPLETE ACCEPTANCE
with
DELCO BATTERIES

Because:

**Delco Batteries are
original equipment
on leading makes
of cars, trucks,
commercial
vehicles, buses
and farm tractors**



DELCO BATTERIES—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Delco-Remy
DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

My Advertising because it features *My SIGN!*

YES SIR, hundreds of POST and TIME readers right in your own area are seeing these Pedrick ads. And because each ad features the Pedrick sign, it attracts business to the shop of every Pedrick Franchise Dealer where the sign is on display. It is really *your* advertising because it features *your* sign to your customers and prospects.



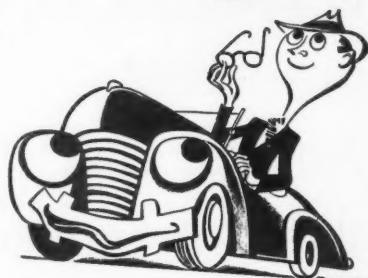
National consumer advertising is only part of the carefully-planned, business-getting, five-star program for Pedrick Franchise Dealers. Ask your distributor for full information on the Pedrick Franchise Dealer Plan, or write to us direct. WILKENING MANUFACTURING Co., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto.

Pedrick

**"HEAT-SHAPED"
PISTON RINGS**



**A SIGN
OF BETTER ENGINE
REPAIR WORK**



Pedrick

**"HEAT-SHAPED"
PISTON RINGS**

When your engine smokes and uses too much oil . . . when you notice a loss of power and pep . . . look for this piston ring service sign. Here you'll find a repair shop qualified to install Pedrick "Heat-Shaped" piston rings, backed by the famous Pedrick guarantee. And here your engine will be made to run like new, to operate more smoothly, and to last longer.

WILKENING MANUFACTURING Co., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto.

Anxious about YOUR brakes?



With winter on the way, you should think about your brakes.
But you needn't worry about them . . . if they're lined with
Grey-Rock Balanced Brake Linings.

WHY BE ANXIOUS

. . . when it's so easy
to be sure?

You can be sure of your brake jobs . . . your customers can be sure of their brakes . . . when you install Grey-Rock Balanced Brake Linings!

Remember, too, that your customers *know* Grey-Rock . . . they see Grey-Rock ads like this *regularly* . . . big, colorful ads that stress the importance of getting brakes checked often at the shop that features Grey-Rock linings . . . uses Grey-Rock service methods, based on National Safety Council standards.

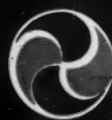
Get in touch with your Grey-Rock jobber now. He'll help you turn this Grey-Rock campaign into a real profit-maker!

GREY-ROCK BUILDS BUSINESS FOR YOU WITH
ADS LIKE THIS, APPEARING REGULARLY IN

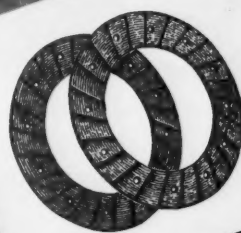
POST Collier's Holiday

SEE YOUR GREY-ROCK JOBBER
ABOUT BBP SETS FOR BONDING

Grey-Rock



BALANCED BRAKE LININGS



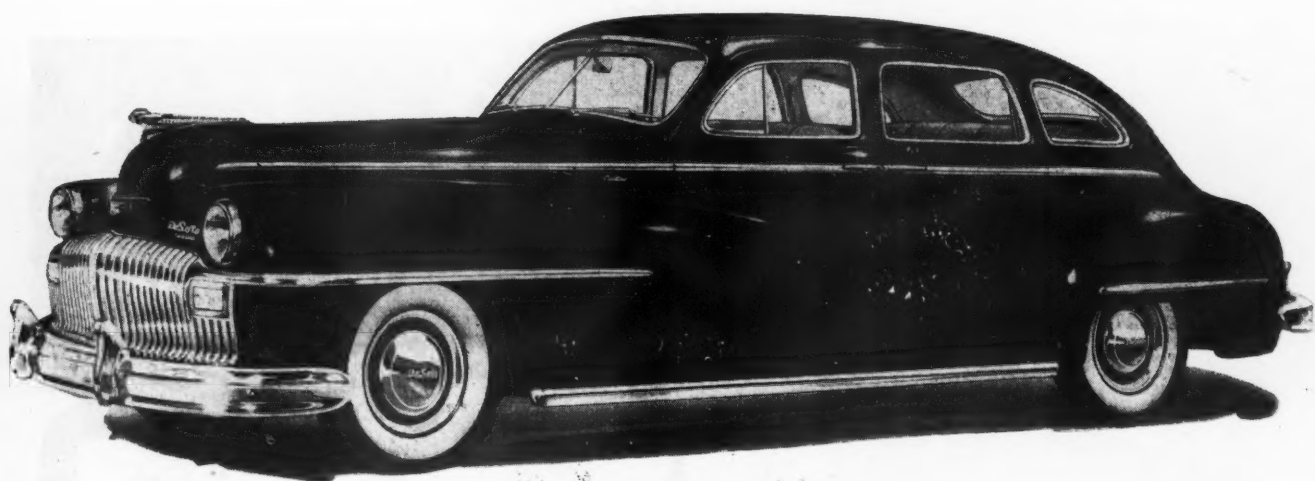
UNITED STATES ASBESTOS DIVISION
of Raybestos-Manhattan, Inc.
Rushville, Pa.

Preferred **FROM COAST TO COAST**

Here is proof that De Soto is preferred from coast to coast...proof, too, that great futures are in the making for De Soto-Plymouth Dealers. In a nationwide poll of new owners, the vast majority declared, "De Soto is the best car I ever owned, regardless of price!"

DE SOTO

LETS YOU DRIVE WITHOUT SHIFTING



TUNE IN "CHRISTOPHER WELLS"—THE DE SOTO-PLYMOUTH DEALER PROGRAM—EVERY SUNDAY NIGHT ON ALL COLUMBIA (CBS) STATIONS



3 out of 4 new car owners use "premium" gasolines!

Do your part—set the timing of new engines for best performance

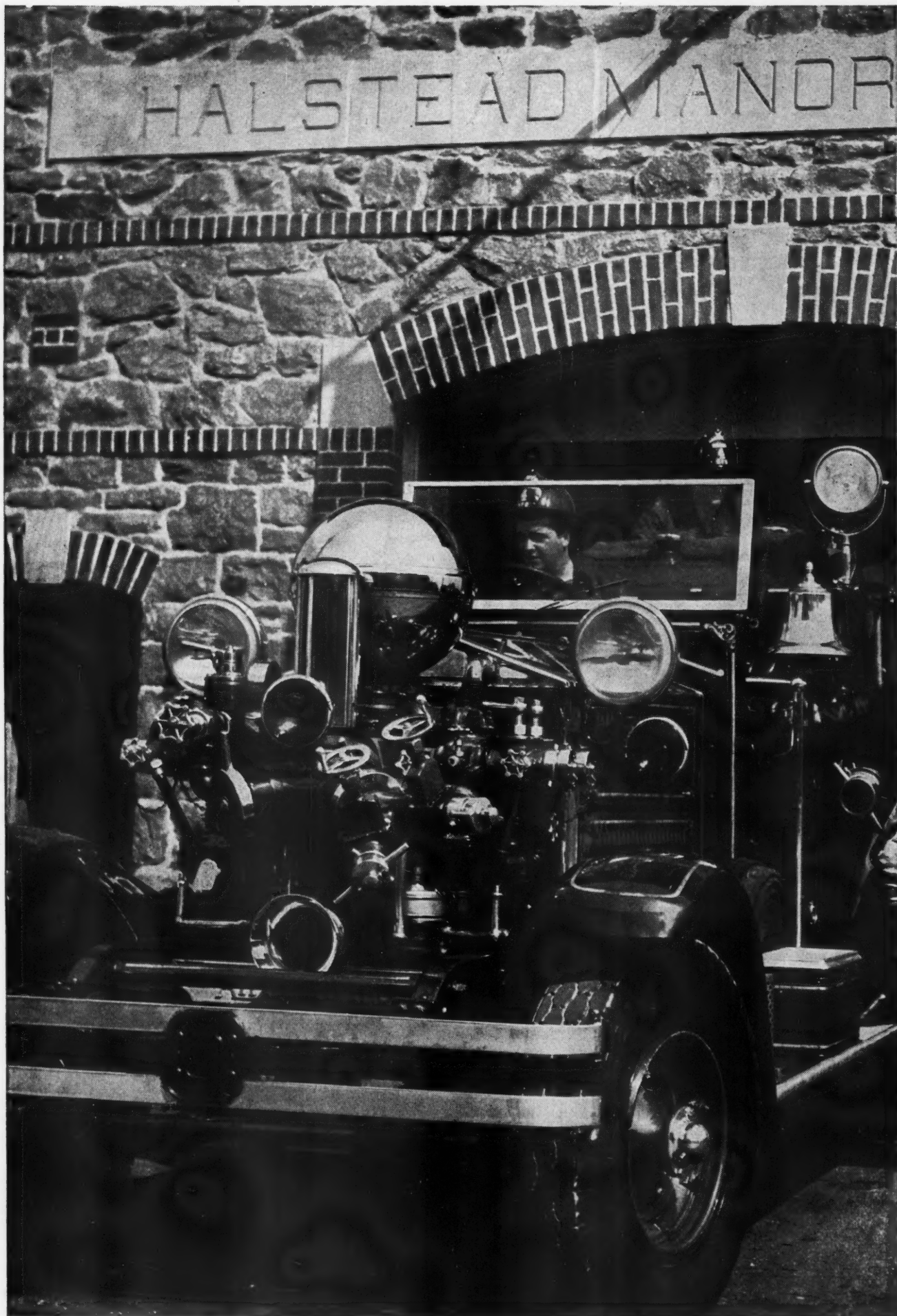
Car owners want maximum power and performance from brand-new engines. That's why 76% of new car owners use "premium" gasolines right now and 80% of those expecting delivery of a new car say they plan to do so.

These facts were revealed by a survey of car owners all over the country. They show why it's sound business for you to set the timing of new cars for best performance with "Ethyl" gasoline. Check the timing on each car you deliver. Make sure your customers aren't disappointed—that they get all the power they expect from their new cars.

Ethyl Corporation, New York 17, N.Y.



Products sold under the "Ethyl" trade-mark—Antiknock Compound . . . Detergent Cleaner . . . Salt Cake . . . Ethylene Dichloride . . . Sodium Metallic . . . Chlorine (liquid) . . . Oil-Soluble Dye.





"Taken for granted" Service...

EVERY second counts when the race is against fire. The faultless performance of our fire fighting equipment in more than 3200 American communities depends, to an unusually large extent on the honest workmanship and original factory parts supplied by thousands of automotive service men.

This type of dependable service is keeping America rolling to bigger and better records every year . . . it has established, too, a remarkable record for sound, profitable business. Garage and service stations who place service first can get full information about the valuable Auto-Lite Parts and Service Franchise from the nearest Auto-Lite Central Distributor or by writing to

THE ELECTRIC AUTO-LITE COMPANY
Parts and Service Division

Sarnia, Ontario

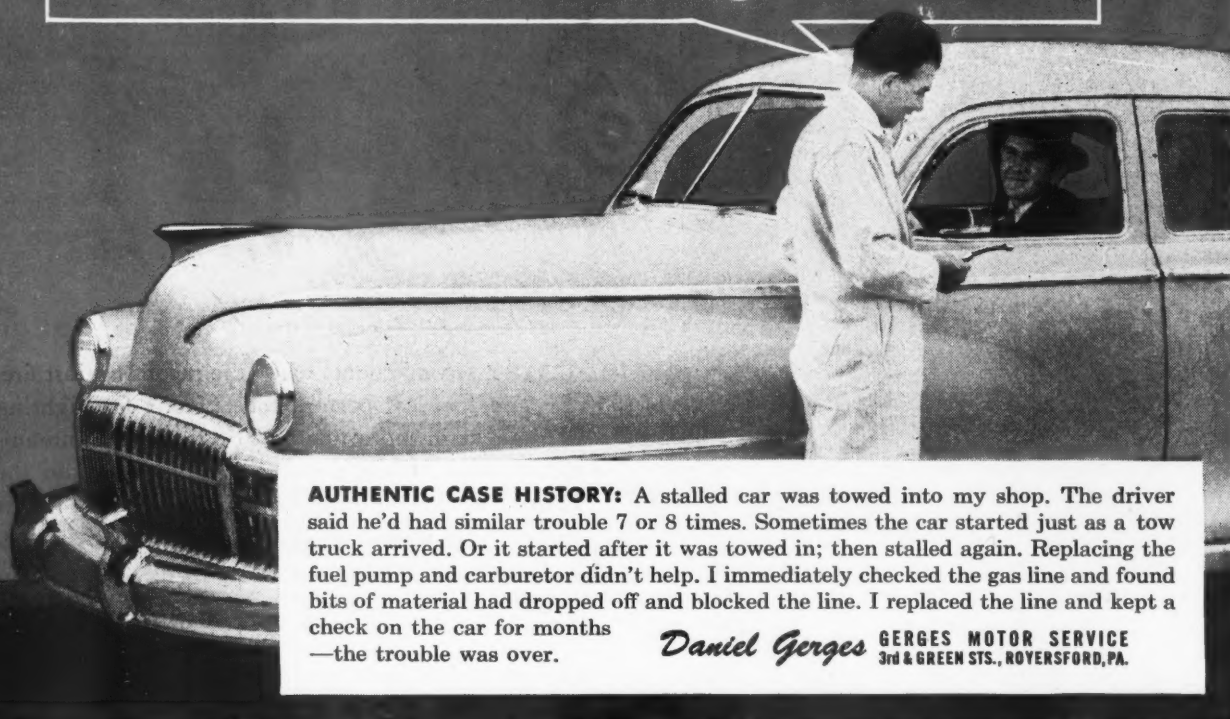
Toledo 1, Ohio

AUTO-LITE

Starting · Lighting · Ignition



**"Replacing the gas line
would have saved you
all those towing bills!"**



AUTHENTIC CASE HISTORY: A stalled car was towed into my shop. The driver said he'd had similar trouble 7 or 8 times. Sometimes the car started just as a tow truck arrived. Or it started after it was towed in; then stalled again. Replacing the fuel pump and carburetor didn't help. I immediately checked the gas line and found bits of material had dropped off and blocked the line. I replaced the line and kept a check on the car for months —the trouble was over.

Daniel Gerger **GERGES MOTOR SERVICE**
3rd & GREEN STS., ROYERSFORD, PA.

We pay \$50.00 for case histories! Tell us about your experience with faulty gas-oil hose. We will pay \$50.00 for each one used by us in a Resistoflex advertisement. The company will be the sole judge; and all entries become the property of Resistoflex Corporation.

GAS AND OIL LINES CAUSE LOTS OF TROUBLE

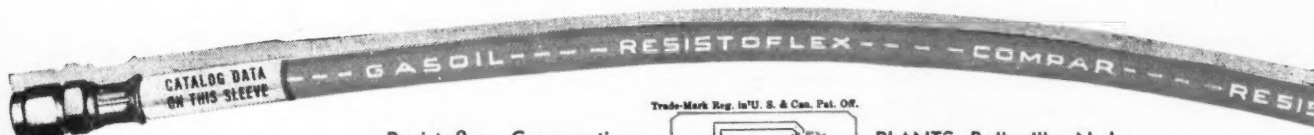
but

RESISTOFLEX

gas-oil hose with COMPAR tube

WILL NOT SWELL, ROT, CLOG, LEAK, BREAK, OR COLLAPSE!

- Totally unaffected by all types of gasoline, gasoline additives, Diesel fuel.
- Totally unaffected by all lubricating oils and crankcase additives.
- Totally unaffected by flexing and vibration.
- Original equipment on vehicles, vessels, aircraft, oil filters.



Resistoflex Corporation
Belleville 9, New Jersey



PLANTS: Belleville, N. J.;
Elkhart, Ind.; Toronto, Can.

GAS • OIL HOSE • HOSE ASSEMBLIES • REUSABLE COUPLINGS • TUBE FITTINGS



Quick Starts ... Long Life

WILLARD BATTERIES — Automobile
Truck and Bus • Radio • Motorcycle
Tractor • Aircraft • Marine • Diesel
Stationary — Sold and serviced
by Willard Dealers everywhere.

**"SAFETY-FILL"
BATTERIES
Willard**

Dependability • Performance • Long Life

WILLARD STORAGE BATTERY CO. • CLEVELAND • LOS ANGELES • DALLAS • TORONTO

One Entire Plant

DEVOTED TO MAKING

FRENCHTOWN INSULATORS

Here
sole emphasis is placed
on the development and production
by skilled ceramic engineers
of Spark Plug Insulators with high
heat resistance, high dielectric
and mechanical strength.
No matter what your requirements are,
Frenchtown engineers will be glad
to assist you.
Write today.

Used
by more
Spark Plug Manufacturers
than any other make -
the result of
31 years
constant research.

FRENCHTOWN PORCELAIN CO.

Sales Office, 8 Muirhead Ave., Trenton, N. J.

Factory, Frenchtown, N. J.

IMMEDIATE DELIVERIES PLUS OUTSTANDING QUALITY AND LOW PRICE SKYROCKET PACKETTE SALES

CLASS OF SERVICE

Extra long life. Modern design, all-steel, all-welded construction gives maximum cargo protection. Production line fabrication assures top quality plus low price.

OLTMAN-O'NEILL PACKETTE DEALERGRAM

SYMBOLS

- + Many new features
- X Operating advantages
- = Owner satisfaction

TRUCK DEALERS AND OWNERS

THE PACKETTE ALL-STEEL, ALL-WELDED, ALL-PURPOSE PACKAGE DELIVERY BODY WAS "EXPOSED" TO THE INDUSTRY IN JULY '47. THE DEMAND FOR THESE SOLID, GOOD LOOKING BODIES WAS INSTANTANEOUS AND NATION-WIDE. ORDERS POURED IN FROM NEW YORK (750), PHILADELPHIA (200), PITTSBURGH (200), NORFOLK (200), DETROIT (200), DALLAS (200), SAN FRANCISCO (250), AND SO ON FROM ALL PARTS OF THE COUNTRY. LOW PRICES PLUS IMMEDIATE DELIVERIES ARE POWERFUL BUYING FACTORS. PRODUCTION LINE SCHEDULE OF ONE BODY EVERY 30 MINUTES MAKES THIS POSSIBLE.

OLTMAN-O'NEILL COMPANY
5171 MARTIN AVENUE
DETROIT 10, MICHIGAN

The Packette, an entirely new all-welded package delivery body. Dimensions back of the adjustable driver's seat: 114" long, 75" wide, 64" head room; cargo space 306.8 cubic feet—designed for mounting on any flatface cowl chassis of 128" to 137" wheel base . . . Also Van type all-welded bodies—9'-12'-14'-16' lengths—wheelhouse or standard models.







RATED

Look to AMCO for Top-RATED Performance and *Plus-Profits!*

● Look to AMCO... for two BIG reasons!
Plus-Performance... Plus-Profits!

They're *yours*... brought to you by AMCO... backed by years of know-how in the manufacture of quality brake lining. For 23 years, AMCO has been principally in the service of America's greatest car manufacturers... turning out millions upon millions of brake lining segments and clutch facings... meeting demands for *high quality at reasonable cost!*

Now... as never before... AMCO's production efficiency is at *your service, too!* Today, back of AMCO are extensive testing and research facilities, plus AMCO's great production plant to give you this unbeatable combination: a full line of AMCO friction materials "Safety-RATED" to meet the exacting requirements of each specific vehicular brake job. All this... plus fan belts and hose... are yours to capitalize upon so that you can *MAKE MORE MONEY* out of Brake Service.

**ASBESTOS MANUFACTURING
COMPANY, Huntington, Indiana**



AMCO
Safety-RATED

**BRAKE LININGS • CLUTCH FACINGS
BRAKE BLOCKS • FAN BELTS • HOSE
FOR CARS • TRUCKS • BUSES**

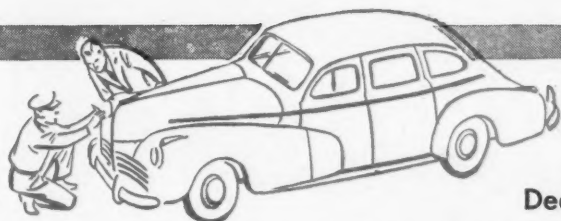
Copyright 1947 by Asbestos Mfg. Co.

R-2472

Thousands of Dealers Are Set to Go



on **OCT. 24TH**



Dealers all over the United States are set to profit by
tying in with the latest two-page Preventive Service message . . .

"get your car ready for Winter." It will appear in the November 1st issue of
COLLIER'S—on the newsstands October 24th.

These dealers are using point-of-sale and
direct mail material to tell local
Collier's readers that they are ready
to render the Preventive Service
Collier's recommends.



It's not too late for you to join the P.S. profit-makers. Write a postcard or a
letter to your customers, or phone them that you are all set to give them
top-notch service in getting their cars ready for Fall and Winter.



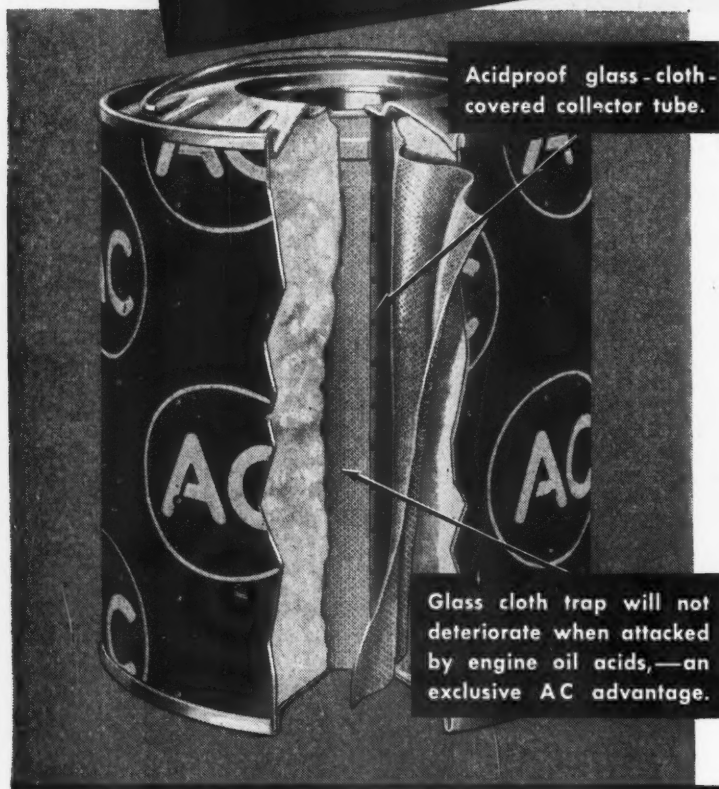
On the morning of Oct. 24th get a copy or two of
COLLIER'S. Read the P.S. message, Show it to your customers.
Be one of the thousands of progressive dealers who will
tie in and cash in. Don't forget the date—COLLIER'S issue of
Nov. 1st—on sale at newsstands Oct. 24th.

Collier's

P.S. *Preventive Service*

ONLY AC GIVES YOU THE GLASS CLOTH COLLECTOR TUBE TRAP

BIGGEST OF 10 BIG SALES FEATURES IN AC'S
NEW AND COMPLETE LINE OF "5-STAR QUALITY"
OIL FILTERS AND REPLACEMENT ELEMENTS



Acidproof glass-cloth-covered collector tube.

Glass cloth trap will not deteriorate when attacked by engine oil acids,—an exclusive AC advantage.

AC's Glass Cloth Collector Tube Trap is the biggest individual sales feature in oil filter elements today. It's an *exclusive* AC quality feature that will give you a decided advantage over competition, and increase your filter and element sales.

This Glass Cloth Trap can't rot and thus allow pollution of the oil stream. It is not harmed by the acids that are the by-products of combustion. Finally, it is an additional, permanent filtering material.

1 Positive End Seals. Two-step cork gasket permanently seals the collector tube—oil cannot get into outlet tube until filtered.

2 Extra Sturdy Bail. Heavy wire bail, firmly anchored, assures easy removal of dirty element.

3 Machined Gasket Seat. Permits perfect leakproof fit of cover gasket against shell.

4 High Outlet Restrictor Position. Location high on outlet tube prevents "drain-back" to crankcase

and assures accuracy of dipstick reading. Position on outlet instead of inlet prevents clogging of restrictor by dirt in oil.

5 Even Distribution of Flow. Accurate, even spacing of perforations distributes oil flow over



WHAT "5-STAR QUALITY" MEANS

This thoroughgoing protection is characteristic of the quality of the entire "5-Star Quality" Line of elements and

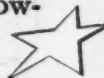
filters. You'll find the evidence at the left, and at the bottom of the page.



COMPLETE MARKET COVERAGE

From every standpoint, the "5-Star Quality" Line is complete. There's a Filter to fit nearly every car, truck, and tractor. There's an Element to fit

nearly every make of filter,—giving you full coverage of the swiftly growing replacement market.



HOW YOU CAN CASH IN

Ask your AC Wholesaler about the big "5-Star Quality" merchandising program. It gives you the backing of magazine, newspaper, radio, farm paper, and truck journal advertising. It gives you a free identification sign, posters, and

other real sales helps. It gives you the famous AC Oil Test Pads and a metal dispenser for them. If you're not already an Official Registered AC Oil Filter Service Station, sign up now and profit by this nation-wide sales drive.

Available Now.

*Get your
stock in shape.*

*Make money
with AC.*



entire element surface. Total area and size of perforations are scientifically related to the capacity of the element.

6 **Outside-In Flow.** Exposes the greatest element area to incoming dirty oil.

7 **Long Fibre Virgin Cotton, Ram-Packed**—assuring that, size for size, every AC Element contains the correct amount of filtering material to assure better filtration. No chemicals. Will not add chemicals to oil nor remove detergents. Precision, automatic ram packing assures uniform

density and freedom from channeling.

8 **Extra Heavy Oil Filter Metal Case**—assures durability, perfect fit, and will not change form. Baked gloss finish outside. **Extra Large Hex Drain Plug**, for easy removal of sludge.

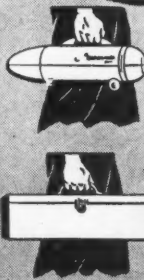
AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION



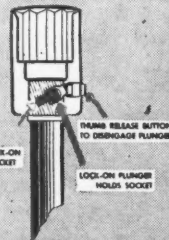
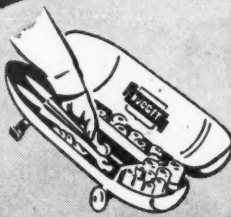
NUGGETS*
MAKE
A GOOD MAN
EVEN BETTER



49 NUGGETS
 IN THIS SET
 WEIGH ONLY
 12 LBS. 2 OZ.



65 WRENCHES
 IN 3/8" & 1/2"
 DRIVES (TO
 DO WORK OF
 49 NUGGETS)
 WEIGH 19 1/2
 LBS.



BECAUSE fewer wrenches do more work. No duplication of sockets, handles, attachments is necessary as with 3/8" and 1/2" series.

BECAUSE Nuggets save up to 42% in wrench investment. ONE DRIVE does ALL the work, eliminating costly duplication.

BECAUSE Nuggets save time, and time is money. No moments lost fitting wrong socket to right drive. "Scoop type" case speeds handling.

BECAUSE extra safety is created by Blackhawk's patented thumb-release LOCK-ON. — Sockets can't slip off accidentally.

BECAUSE new, Nugget design and Bullet Case merchandise workmanship. Smooth, stay-clean handle looks smart—stays smart.

because **THEY'RE BUILT FOR "PRO" MECHANICS**

Man!—Nuggets not only give you everything you want in wrenches but a whale of a lot you don't expect. Just check this whopping big array of Nugget features. Imagine yourself as the owner of a set of wrenches that are made of a steel that gave them triple the life span of ordinary wrenches—save you 42% on your wrench investment—are more compact and lighter wrench for wrench and set for set than anything you've ever twirled—and that are completely new in design.

Beauties that advertise the fact that you are a *professional*! Sparkling chromium-plated handles—free of grease catching cross knurls but shaped to comfortably fit your hand and "lock" in your grasp. Well, that's what you get when you tell your Blackhawk Jobber you want Nuggets. See him now and get the lowdown on these "professional" wrenches.

A Product of BLACKHAWK MFG. CO., Dept. W6107
 Milwaukee 1, Wisconsin

Only Blackhawk has NUGGETS . . . and only NUGGETS have the DOUBLE-DUTY DRIVE



7/16" Drive Wrenches



3/8" Drive Wrenches



1/2" Drive Wrenches

Why Buy Two when ONE does the Job

•Reg. U. S. Pat. Office

BLACKHAWK

NUGGETS* PROFESSIONAL WRENCHES for
 PROFESSIONAL MECHANICS

Promote Customer Safety...

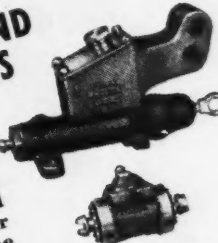
Use All Three DELCO SERVICE PRODUCTS

Here is a three-way short-cut to customer goodwill—three Delco products that are all you need for complete brake service that wins owner satisfaction.



DELCO BRAKE REPAIR KITS

Packed in sealed, metal-top containers that are easy to stock and easy to use, Delco brake repair kits supply you with all essential replacement parts for servicing master and wheel cylinders—all genuine original-equipment parts.



DELCO MASTER AND WHEEL CYLINDERS

Ready for installation; come to you direct from the original-equipment production lines in factory-sealed cartons that are your guarantee of genuine Delco quality.



DELCO SUPER 9 BRAKE FLUID

Meets every requirement of the modern braking system. It is unaffected by temperatures (from 50 below zero to 300 above). It doesn't harm metal or rubber parts. Use Declene flushing fluid first—then refill with Delco Super 9 hydraulic brake fluid.



DELCO BRAKE—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS



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DIVISION OF
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STANDARD FOR EQUIPMENT • THE STANDARD FOR REPLACEMENT

Super-safe



Super-appeal

Reasons why **Super Pyro Anti-rust Anti-freeze** is your best bet for super-sales, super-profits this year . . .

New strong formula for added anti-freeze defense!

New anti-rust for strongest corrosion resistance!

New freedom from odor! New lasting power!

New low price! New gold-and-purple container!

All dramatized through the greatest **Super Pyro** advertising program yet!

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AMERICA'S

FASTEST-SELLING

ANTI-FREEZE



Copyr. 1947
U. S. Industrial Chemicals, Inc.

There Are **EXTRA** **CHRISTMAS PROFITS** in these **Trico Christmas Packages**



A Trico Motor Car Fan will keep steam, frost and condensation off the inside of the windshield and help prevent ice formation on the outside. Available with flexible rubber blades as shown, or with caged metal blades. Furnished with universal attachment bracket for easy installation.

The Trico Automatic Windshield Washer — Trico's "Two Little Squirts" — at the touch of a button, sprays the windshield with two squirts of clear water. A swing or two of the wiper blades completes the cleaning process. Useful all the time, indispensable for night driving. It's easy to sell — easy to install.



A Trico Automatic Windshield Washer or Motor Car Fan is a "natural" as a Christmas gift for any car owner. So to help you cash in on this ready gift market, Trico offers these two fast-selling specialties in colorful Christmas packages.

These packages will make an attractive display in any dealer's window or on any shelf or counter. They will compel attention, cause customers to ask questions and *make sales*. The Christmas wrapper is removable so that any remaining after the holidays can be placed in your regular stock.

The Christmas selling season is almost here. So don't delay. Order your supply of Trico Automatic Windshield Washers or Motor Car Fans in special gift packages *today!*

TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.

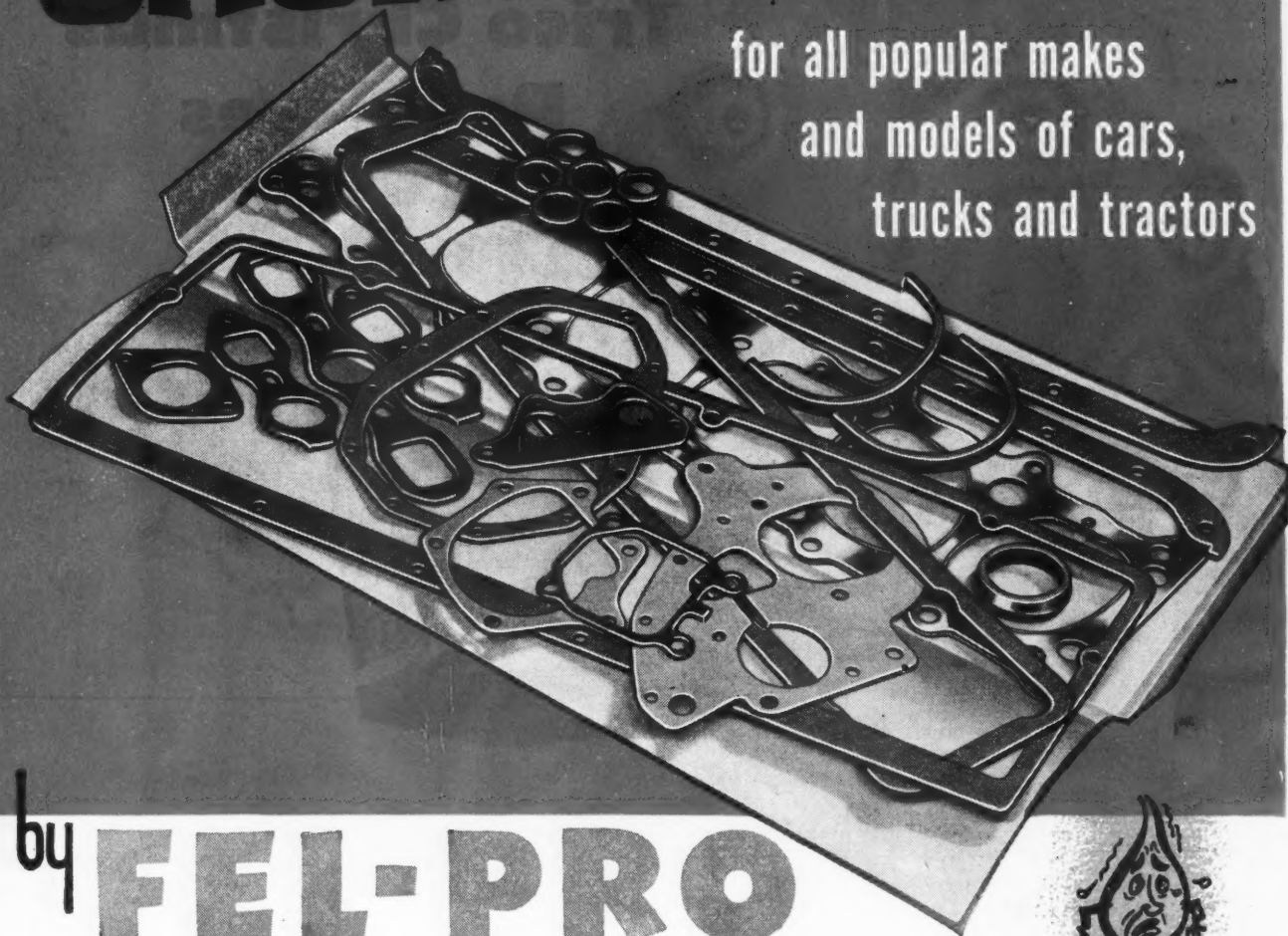


Clear Vision Driving *thru*

Harnessed *Air* Power

GASKET SETS

for all popular makes
and models of cars,
trucks and tractors



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MAKE MORE PROFIT PER JOB with FULL GASKET SETS!

When you do an overhaul or valve grinding job, you can *increase your profits*. You can insure greater customer satisfaction. You can do both by installing Fel-Pro FULL Gasket Sets. Why pass up these *extra profits*? Why risk losing good customers simply because you fail to replace all the gaskets? Why not re-gasket the entire job with Fel-Pro FULL Gasket Sets? You can always depend on Fel-Pro Gaskets to give complete, compression-tight, leak-proof service. Fel-Pro makes original equipment gaskets for many leading car manufacturers. Why not make Fel-Pro your gasket source, too? At your jobbers, Fel-Pro Gaskets are available in Full Gasket Sets, in Valve Grinding Sets or as individual gaskets. Start saying, "Fel-Pro" TODAY!



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and keep him stopped
use **FEL-PRO!**

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R-2604

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FELT PRODUCTS MFG. CO. 1521 CARROLL AVENUE • CHICAGO, 7, ILLINOIS

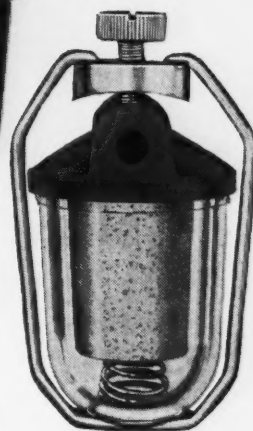
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Double the Opportunity for sales and profits

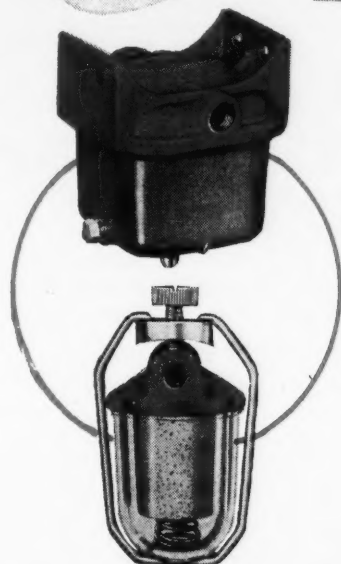


CERAMIC FOURSOME
FUEL FILTER

CERAMIC
FUEL FILTER



CARBURETOR
TRADE MARK REG. U. S. PAT. OFF.
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-Thanks to the New **CARTER FOURSOME CERAMIC FUEL FILTER**

To the record breaking sales and profits from the outstandingly popular standard Carter Ceramic Fuel Filter service retailers can now add those to be made from the new Carter Foursome Filter.

The Foursome contains four of the same ceramic filtering elements which have made the Carter Ceramic Fuel Filter foremost in its field.

Straining is not enough—the scientifically designed Carter element made of a specially prepared porcelain thoroughly filters the gasoline (removes particles as small as 1/25000 inch), providing a steady flow of fuel free from dirt, lint and other harmful matter.

List Price Foursome Filter . . . \$7.35
List Price Ceramic Filter . . . \$2.10



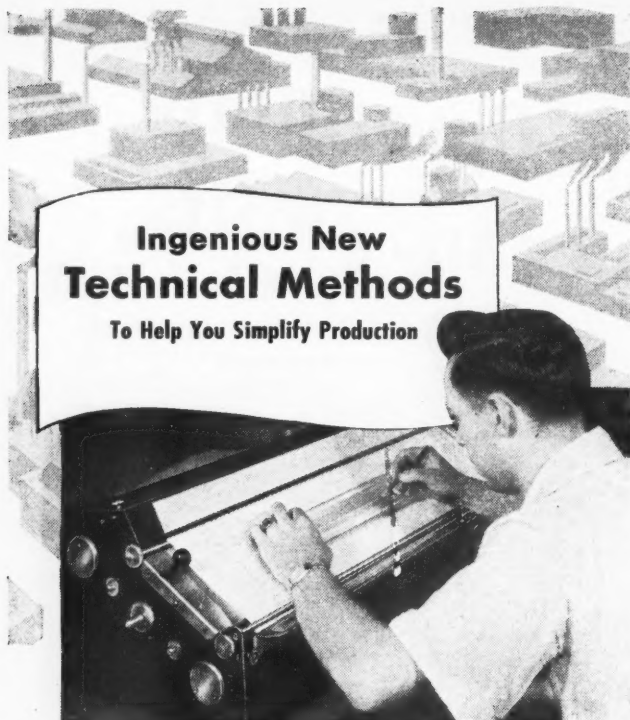
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CARTER CARBURETOR CORPORATION

St. Louis 7, Missouri

Division American Car & Foundry Company



Ingenious New Technical Methods

To Help You Simplify Production

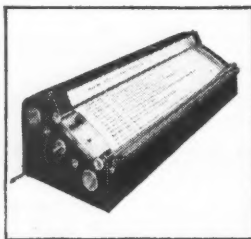
New Automatic Device Provides Up-to-the-Minute Visual Record

The new CHART-O-MATIC provides an instant visual record of all production, shipments, purchases, absenteeism, etc. Avoids inventory surpluses. Guides purchasing department giving constant picture of all parts and supplies on hand. Requisitions can be made direct from chart. Information from all departments transmitted to operator by Telautograph permits instant recording on CHART-O-MATIC. Does away with big wall charts and card-systems and tedious, time-consuming search for data that is often far from current. With the CHART-O-MATIC, the complete activities of the entire plant can be determined in an instant.

The entire unit is easily portable and operates from 110 volts current. Chart rotates in either direction by finger-tip control. Speed may be governed by rheostat.

New devices are proving their worth in saving time and reducing nervous tension on the job. And modern plants throughout America are finding that chewing gum on the job helps relieve monotony and helps to keep workers alert. That is why more plants every day are making Wrigley's Spearmint Gum available to their employees.

Complete details may be obtained from Spiral Mfg. Corporation, 3612 N. Kilbourn Avenue, Chicago 41, Illinois.



The New Chart-O-Matic



AB-75

MOTOR AGE

With Which Is Combined AUTOMOBILE TRADE JOURNAL

FOR AUTOMOTIVE SERVICEMEN

VOL. LXVI, No. 11

October, 1947

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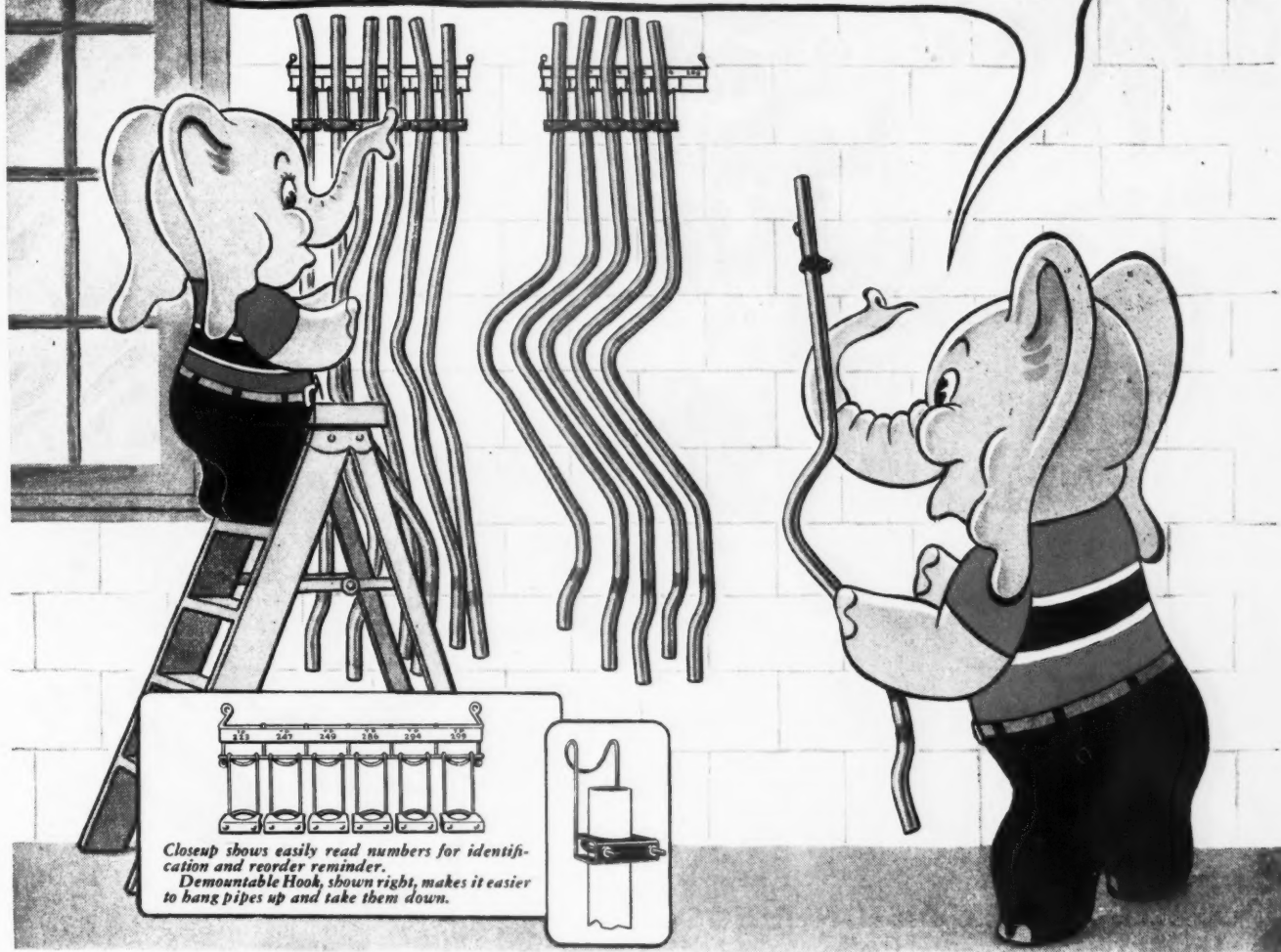
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COME DOWN, JUNIOR—YOU DON'T NEED A LADDER
FOR THE **MAREMONT TAILPIPE RACK!**

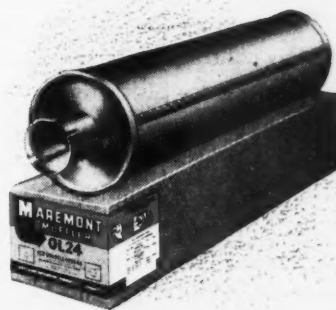


Closeup shows easily read numbers for identification and reorder reminder.
Demountable Hook, shown right, makes it easier to hang pipes up and take them down.

Pipes Easy To Get At! Takes No Floor Space! Hangs From The Wall Or Ceiling!

The Maremont Tailpipe Rack is the most convenient method of stocking tailpipes you've ever seen! It hangs from the wall or ceiling . . . takes no floor space.

The disorderly, space-consuming *pile* of tailpipes is definitely a thing of the past! *No longer* need you dig through your entire stock for the one tailpipe you want. *No longer* need you GUESS which pipes are in stock, which pipes should be reordered. The Maremont Tailpipe Rack eliminates ALL the inconveniences of out-of-date stocking methods. It saves space, it saves time, it saves effort! For more details on Maremont's convenient Tailpipe Rack, see your local jobber or write directly to the factory.



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OF ALLOY STEEL SPRINGS

SINCE
1877

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MUFFLERS

Maremont Automotive Products, Inc.
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For low friction, too...



NOT 2...



NOT 6...

but **26**

basic designs

OF SEALED POWER PISTON RINGS

LOW FRICTION is vital to balanced performance in piston rings. Sealed Power Individually Engineered Ring Sets insure low friction, as well as oil control, blow-by control, and minimum wear—the BIG FOUR requirements for piston ring satisfaction. Each Sealed Power Set is selected from twenty-six (26) basic designs of piston rings. Whatever the make, model or cylinder wear condition, there's a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets for seven years, has been producing rings for car, truck and engine builders 35 years. For balanced performance, re-power with Sealed Power motor parts. Sold by leading distributors. Sealed Power Corporation, Muskegon, Mich. and Stratford, Ont.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts



INDIVIDUALLY ENGINEERED



SEALED POWER PISTON RINGS

BEST IN NEW CARS! ★ BEST IN OLD CARS!

Keep your War Bond!
Get \$4 for \$3!



NEWS BULLETIN

- ★ Wholesale food costs are up 23 per cent over the May 1920 peak, which preceded the Post-World War I bust.
- ★ C.I.O. auto workers officially refused pensions but accepted an 11½ cent hourly wage increase, plus six annual paid holidays for Ford production workers.
- ★ Interest rates charged by banks on loans are inching higher as business loans approach \$13 billion for new high.
- ★ Manufacturing workers' weekly wages off 30 cents to \$49.03 in July.
- ★ Latest worry is that fuel shortages may cut winter production.
- ★ C.I.O. is trying to prove that restrictive labor laws in 36 states are unconstitutional.
- ★ Packard has announced that production of their complete 1948 line is now under way. New line will consist of three new eights and includes an all-steel "Station Sedan".
- ★ State bank superintendents are warning against the danger of further bank loan expansion.
- ★ Hudson plant closed for one week late in September for changeover to 1948 models.
- ★ Automotive parts manufacturers report that many new profit records are indicated for 1947.
- ★ Tire chains and anti-freeze are both expected to be scarce during the coming winter.
- ★ U. S. industry consumed more crude rubber during the first seven months of the current year than it had ever used in an entire year prior to World War II.
- ★ Independent repair shops get 56 per cent of maintenance business, car dealers get 35, while filling stations get 9 per cent.
- ★ MEMA poll indicates that 269 manufacturers are against exhibiting at the NADA show in January and only 16 for it.
- ★ Octane rating of regular grade gasoline sold during winter of 1946-47 was 75.0 compared to 74.4 the previous summer. Premium gasoline was 78.5 compared to 78.3 for the same periods.
- ★ Kaiser-Frazer will use aluminum fuel tanks because of sheet steel shortage.

Starts on the NEWS

1947 Factory Sales from U. S. Motor Vehicle Plants*

PASSENGER CARS	
June	307,124
July	279,631
August	261,158
Total—Eight months	2,262,180
TRUCKS AND BUSES	
June	93,438
July	99,620
August	88,266
Total—Eight months	815,332
TOTAL MOTOR VEHICLES	
June	400,562
July	379,251
August	349,424
Total—Eight months	3,077,512

Weekly Motor Vehicle Production U. S. and Canada**

September 6	83,444
September 13	106,095
September 20	109,734
September 27	106,121

* Automobile Manufacturers Association.
** Ward's Automotive Reports.

New Models to Favor Automatic Transmissions

As news of the 1948 models continues to seep through the wall of secrecy which surrounds the new models, it becomes more definite that an increased number will be equipped with some form of automatic transmission. With many new car buyers, these units are undoubtedly extremely popular, while another group is equally emphatic in declaring they want to do their own shifting. Both sides have good arguments, but it is interesting to speculate on what will happen to the value of cars equipped with automatic transmissions when they reach the used car market. The present market is, of course, not indicative, but there are strong grounds for the belief that when the business situation becomes normal that cars with standard

manual shift transmission will be in greater demand than cars equipped with automatic units. The reason is, of course, that used car buyers look on both sides of their dollars before spending and prefer cars on which maintenance charges will be minimum. Regardless of how dependable an automatic transmission may be, it is obvious that the repair bill to overhaul an automatic unit would be greater than the charges for the more simple manual shift transmission.

NSPA Regional Meetings Attract 800 in West

Approximately 800 automotive wholesale officials and manufacturer field men attended regional meetings conducted by the National Standard Parts Association during September in California, Oregon and Minnesota. Eight speakers, including top officers of NSPA, appeared on each of four one-day programs to bring to after-market management executives the latest available information on trade practices, legislative trends, industry activities and business procedures.

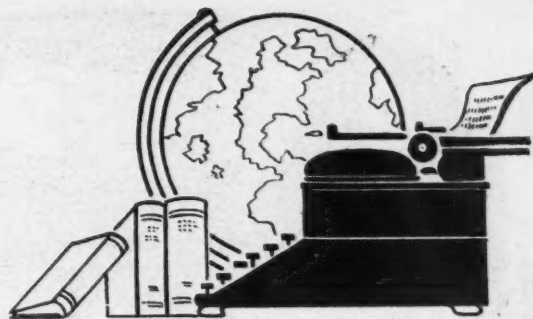
The speakers included C. S. Rogers, president of NSPA; E. M. Sheehan, senior vice-president of NSPA; N. F. Kaplan, vice-president, a director of NSPA; C. C. Tapscott, an NSPA director; J. L. Wiggins, acting executive vice-president of NSPA; C. R. Barnett, marketing research director of NSPA; Walter Trefz, engineering and operations director of NSPA; Harold Halfpenny, attorney for the National Standard Parts Assn.

Pontiac Reports Service Volume Has Reached Peak

After comparing the June customer labor and repair order totals with the performance of the last few months and a year ago, Pontiac factory reports that it appears that the service volume peak has about been reached. Customer labor in Pontiac dealer shops was \$4,468,590, just \$35,000 over June, 1946. Repair orders held steady at 510,085 to make the average repair order \$8.76. A total labor sales of \$56,400,000 is indicated for the year. Parts sales may reach \$79,200,000, an increase of 283 per cent over 1941. Total repair orders for the year will approximate 6,300,000, an increase of 33 per cent.

Plans Still Indefinite For '48 Automobile Show

Chances of an Automobile Show this year have gone glimmering and there are no definite plans for a show next year. A check with AMA reveals that no positive action has been taken either to hold or not to hold a show next year. It normally requires about eight to nine months preparation to stage the National Show, so that it would be necessary to start within the next two or three months in order to line up facilities and other preparations for an exhibition in the Fall of 1948. Manufacturers thus far have not broached the question and it is felt that with the current shortage of materials and the unprecedented demand for automobiles, there is little stimulation for an automobile show for many, many months.



MEWA Board Appoints Johnson and Mills

Motor and Equipment Wholesalers Association has announced appointment by the Board of Directors of Mr. Carl Johnson, Johnson Brothers Auto Supply Company, Wichita, Kansas, as a member of the Executive Committee. Also selection of Mr. Walter Mills, Auto Parts Company, St. Louis, Missouri, and Past President of the Association, as a member of the M.E.W.A. Board of Directors.

Rumors of Cars

According to unofficial reports in Detroit it appears that Chrysler Corporation is planning to come out with styling changes early next year, probably March. From all available evidence on Chrysler die work, however, it would appear that completely new and restyled models will not be ready until some time late next summer. It is reported that there have been several shifts of opinion in the Chrysler organization over new styling and that four or five new starts have been made. The trend now seems to be toward a wider, lower car with a relatively flat top. Another current report is that Pontiac will offer the G. M. Hydromatic transmission as optional equipment on at least part of its 1948 line. Still another piece of news is that the completely new 8-cylinder engine for the 1948 Lincoln is well along toward completion and it is reported that more than 350,000 hours in pattern work alone have been put on the new engine.

ASI Committee Streamlines Registration Procedure to Avoid Last Minute Bottleneck

Every effort is being made to streamline registration procedure and added space for registration desks and some new procedures in handling the issuing of badges are among the steps which have been taken to eliminate delays.

Opening of the big show is scheduled for 9:00 A.M. December 8 at Navy Pier, Chicago. Attendance during the first three days both member jobbers and invited guests who have received formal invitations may attend. Only those non-member wholesalers who receive a formal invitation stating that their credentials will be wait-

ing for them should plan to attend.

Members of the N.S.P.A. and M.E.M.A. will obtain their badges December 5th and 6th at the Hotel Sherman. M.E.W.A. members will find their's available at the Stevens Hotel. Dual Jobber members will pick up their badges at either place. Manufacturers' Agents will pick up their badges at the Stevens Hotel.

Beginning Sunday, December 7th and thereafter, all badges must be obtained at Navy Pier. Invited non-member wholesalers pick up their badges at Navy Pier December 11th.

New Passenger Car Registrations*
Arranged by Make in Descending Order According to the
1947 Seven Months' Totals

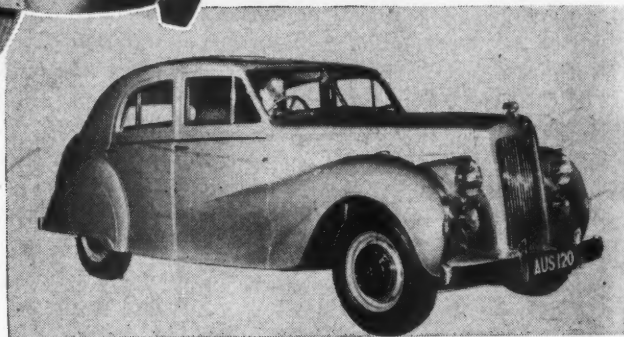
MAKE	July 1947	June 1947	July 1946	Seven Months			
				Units		Per Cent of Total	
				1947	1946	1947	1946
Chevrolet.....	59,676	59,661	30,805	375,962	86,201	20.90	12.94
Ford.....	39,479	44,735	24,893	295,119	132,816	16.41	19.93
Plymouth.....	23,120	25,658	23,621	179,353	98,466	9.97	14.78
Buick.....	19,935	20,352	11,866	134,779	29,362	7.50	4.41
Pontiac.....	18,390	18,201	10,543	120,544	31,803	6.70	4.77
Dodge.....	16,793	16,867	15,872	115,223	64,295	6.41	9.65
Oldsmobile.....	15,212	14,897	8,647	105,291	24,689	5.86	3.71
Nash.....	7,508	8,505	8,233	62,215	41,057	3.46	6.16
Mercury.....	7,694	8,454	4,228	62,056	20,525	3.45	3.08
Studebaker.....	8,715	8,658	5,684	59,700	20,845	3.32	3.13
Hudson.....	9,038	8,670	7,904	59,096	33,485	3.29	5.02
Chrysler.....	7,366	7,419	7,799	52,314	31,195	2.91	4.68
De Soto.....	5,832	5,549	5,813	40,021	28,287	2.23	4.25
Cadillac.....	4,690	4,665	1,592	30,196	6,768	1.66	1.02
Packard.....	3,807	3,526	4,679	25,010	12,977	1.39	1.95
Kaiser.....	4,137	3,337	.....	22,750	.....	1.27	.....
Frazer.....	5,984	5,003	.....	21,119	.....	1.17	.....
Lincoln.....	2,235	2,272	652	14,492	3,158	.81	.47
Willya.....	2,298	2,049	.....	13,598	.....	.76	.....
Crosley.....	1,356	1,319	78	8,784	90	.49	.01
All Others.....	72	66	54	463	241	.02	.04
Totals.....	263,167	269,863	172,961	1,798,085	666,260	100.00	100.00

* Data from R. L. Polk & Co.



The Sheerline sedan, showing the "knife-edge" styling used by British designers to streamline without loss of interior space.

Technical details of the four new models that the British manufacturer is planning to sell on the American market



The Princess, finest car in the Austin line. Fitted with a custom body, this model has largely the same chassis as the Sheerline.

AUSTIN to Appoint

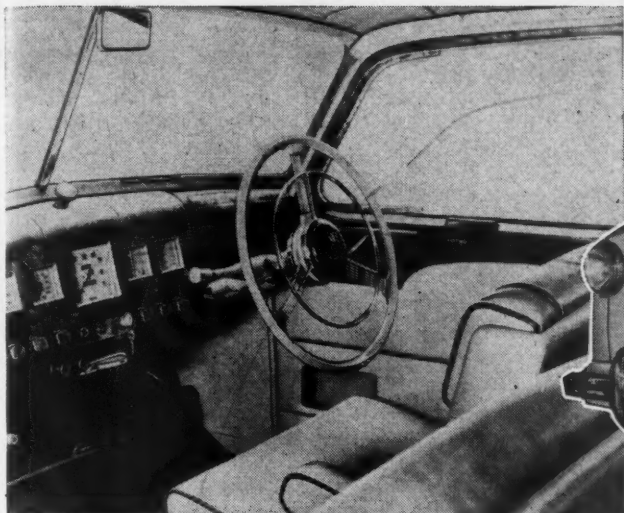
Featuring two basic models, one small and the other conventional size, the Austin Company has set in motion a campaign to sell 20,000 cars in the U. S. in the next 12 months. To this end they are setting up a dealership organization, with New York City as its headquarters, and 7 parts depots scattered throughout the country. When the new set-up is complete, according to Austin, it will be possible for any Austin owner to replace any part within 24 hours, anywhere in the U. S.

The larger Austin will be available in two models, the Princess and the Sheerline, the former selling at about \$6000, the latter at about \$4500. The chassis is largely the same for both cars, the chief difference

being in the bodywork and its appointments.

The heavy X-frame, with 119 in. wheelbase, incorporates an independent front end with unequal arms and coil springs. Seen from above, the arms (or "wish-bones" as Austin calls them) are sharply swept back from the cross member to which they are attached. This was done in order that the frame cross member might still be placed ahead of the far-forward engine. Rear springing is by underslung semi-elliptics, interleaved with zinc and damped by double-piston hydraulic shocks, cross-coupled with a torsion bar.

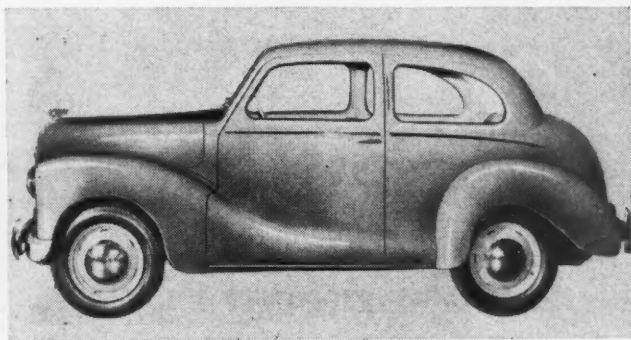
The engine follows current Austin practice and is the same for both the Princess and the Sheerline, except for slight differences in capacity and carburetion



Interior of the Princess. Although this shot shows right-hand drive, all models delivered here will have left-hand drive.



The Devon, a small (92½ in. wheelbase) car with 40 hp, shows unmistakable signs of American influence in body and chassis.



The Dorset, a 2-door version of the Devon. Both cars seat 5 passengers and are planned to sell in the \$1400 price range here.

by RICHARD L. REDDY

The pan is of ribbed aluminum for cooling, with oil, fed by pressure to main, rod and camshaft bearings. Each main bearing oil feed is supplied from a circular channel cut in the bearing housing to insure uniform lubrication of both bearing surfaces. Oil jets lubricate the cylinder walls.

The Sheerline has one, the Princess two, Stromberg carburetors with automatic choke. The AC fuel pump has a hand lever for use if priming is necessary. A refinement of engine detail is to be found in a small baffle-plate mounted in front of the forward end of the inlet manifold. Its purpose is to prevent the airstream from the fan from causing a difference in heat between the two ends of the manifold. The electrical system uses 12 volts, provided by two chassis-mounted batteries.

The transmission has four speeds forward and is unusual in that its flat top eliminates the usual bump in the front compartment. Gears are selected by a lever just below the steering wheel. Lockheed two-leading shoe hydraulic brakes are fitted. Hydraulic jacks, electrically controlled, are built into the chassis as standard equipment, and are operated from the driver's seat.

The bodywork on the Princess is by Vanden Plas, now an Austin subsidiary, and shows extremely fine workmanship throughout. As can be seen from the accompanying illustration, the body lines are more conservative than those of most American cars, but are a good deal in advance of many English designs.

The body is of composite steel and aluminum construction and seats six passengers. The interior, trimmed in walnut veneer and grain leather, is upholstered in wool over rubber. The built-in Ekco radio has speakers in both front and rear compartments. Flush fitting tables for the rear passengers are fitted

(Continued on page 72)

1200 Dealers

that give the Princess 120 hp and the Sheerline 110 hp. Valves for the six cylinders are mounted overhead and are operated through push rods and rocker arms. The rocker arm cover has double walls with insulation between to cut down noise. The crankcase has a separate ventilation system.

Pistons are anodized aluminum alloy, with three compression rings and one scraper ring. The double roller chain timing gears have an automatic tensioner in the form of a synthetic rubber ring between the two banks of teeth on the gear. This not only provides tension but also leads the chain links on and off the teeth without noise. The timing cover is sound-proofed.

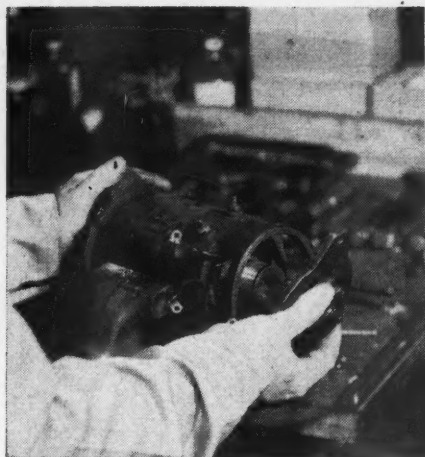


Fig. 1. Remove the commutator end plate.

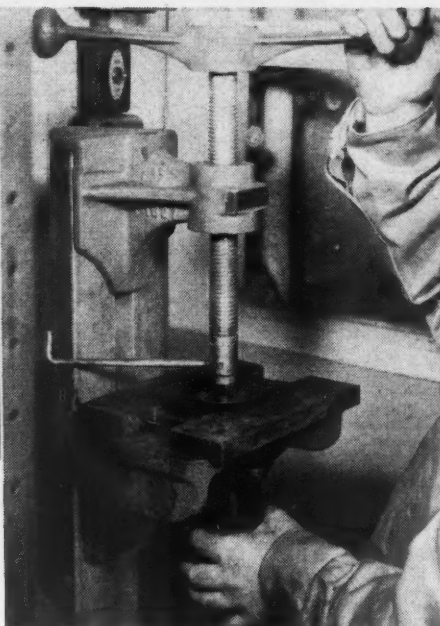


Fig. 2. Using an arbor press to remove the drive pulley. Do not drive it off.



Fig. 3. Soldering a loose commutator lead. Use only safety flux when soldering electrical connections.

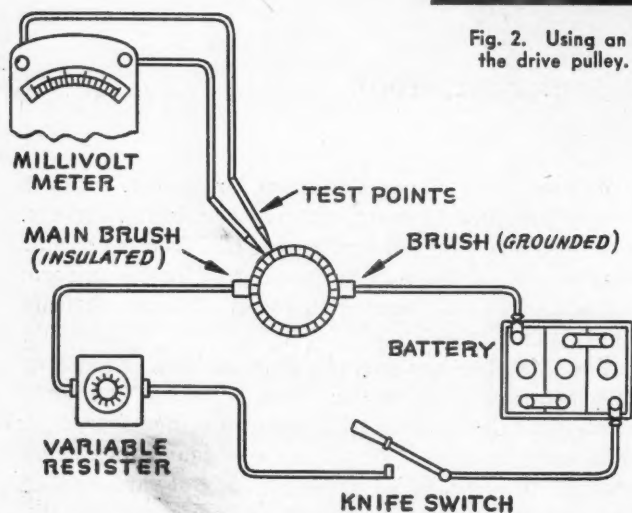


Fig. 7. A diagram of an armature open circuit test. Voltmeter will read full battery voltage between any bar attached to an "open" circuit and the bar next to it.

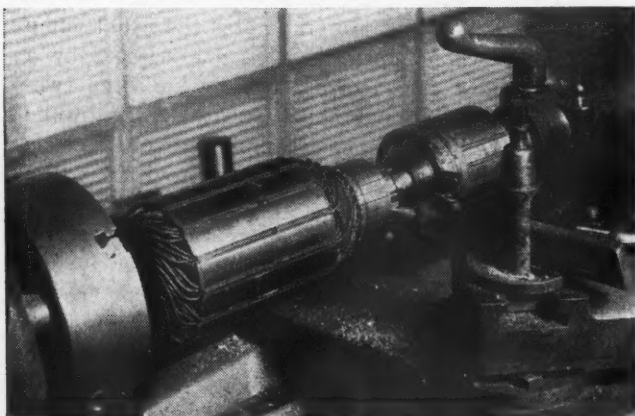


Fig. 8. In turning a commutator the tool bit should be very sharp and have a slight negative top rake.

Rebuilding

Detailed procedure for servicing

A GREAT many shops farm out their generator work because they feel the job is too complicated or that a lot of special equipment is required to overhaul or rebuild generators. Naturally having a specialist do this work has certain definite advantages. But rebuilding generators is not nearly as complicated as overhauling an engine, or rebuilding a transmission, and very little equipment is required. If the shop has the following instruments, passenger car gen-

Fig. 9. Ground test for field coils. The test lamp will light if there is a ground in the field coils.





Fig. 4. Cleaning out between commutator bars. Exercise care, since a small amount of solder between the bars will act as a short circuit.

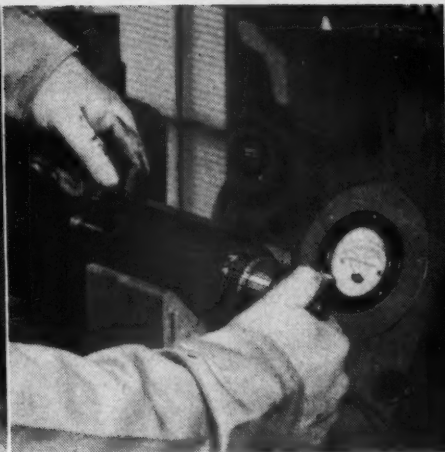


Fig. 5. Testing for short circuits on a growler.

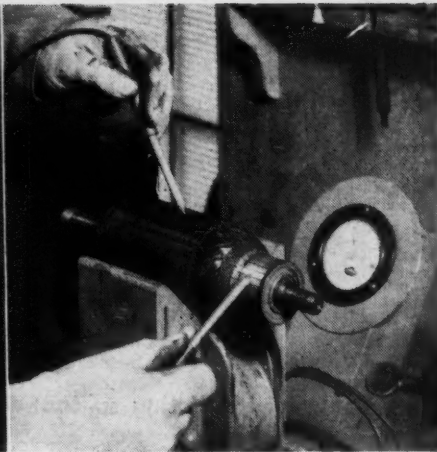


Fig. 6. Touching contacts to commutator and ground in making a ground test. If the commutator is grounded, the test lamp will light.

by ANDREW D. GREY

GENERATORS

passenger car generators in the small shop

erators can be handled readily: a voltmeter which reads to 10 volts, an ammeter reading to 50 amperes, a $\frac{3}{4}$ -ohm, 500-watt rheostat. (A carbon pile variable resistor will substitute nicely), a growler for checking armatures, an ordinary test light, and an engine lathe or special armature lathe.

Of course many shops will prefer to use the regular commercial test benches which are arranged to handle the 12, 24 and 32 volt systems found on trucks and buses as well as

(Continued on page 84)

Fig. 10. Diagram of a field continuity and current draw test. The ammeter will read the current draw of the field coils at battery voltage.

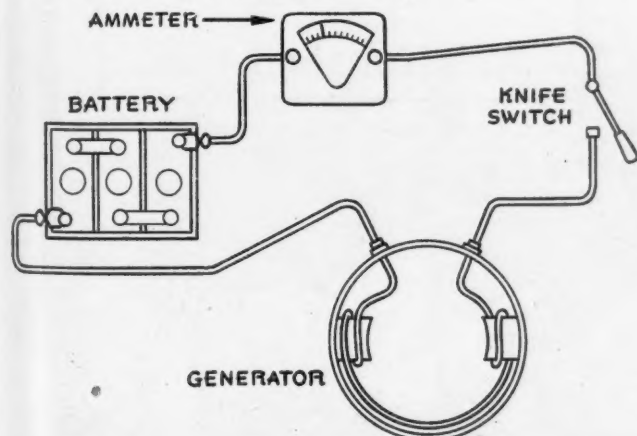


Fig. 12. Right. Sanding the brush to armature curvature.

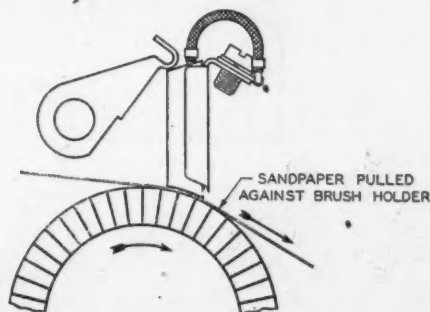
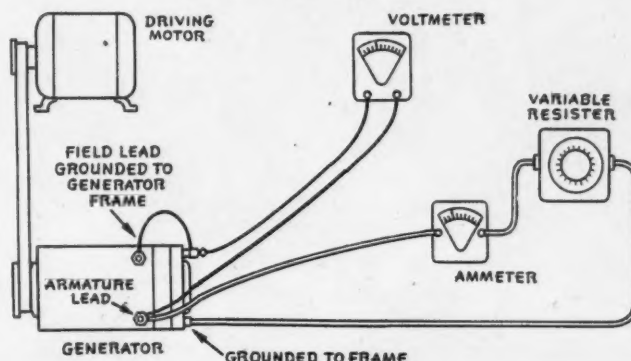


Fig. 11. Meter hook-up for test run. If a special test bench is used, connect the meters as recommended by the manufacturers of your particular equipment.



WHO sees your PHONE NUMBER?

Plan your phone listing so that you get the greatest possible drawing power from the space which you use

If you were looking yourself up in the phone directory, would you be satisfied with what you found? Would your listing or advertisement in the classified pages tell you enough about your business?

The customers for whom you have done auto work may not know that you sell a complete line of automotive parts and supplies. A prospect for an automobile cushion may pass you by because he thinks that repair parts are all you sell. If you sell the many related parts such as batteries, lamp bulbs, tires, speedometers and so forth, you speed customer service and increase your own organization efficiency by listing your phone under all these headings.

Classified advertisements can be any one of three types: a simple listing in light face or bold face types; an informational listing; a display ad.

A simple one line listing will give your phone number, name and address. If your name is shown as a company name then you may have identified yourself in that way, as Ace Auto Repair and Supply Company. This entry can be in ordinary light face type or in bold face. Bold face sets you off from the rest of the listings, unless they are all in the darker type.

After one line listings, in order of prominence, is the informational entry. In this class, you buy space by the inch and may fill it with copy about your service and products, using

a few limited type faces. You can crowd your space with a lot of information in small type, or say less, in larger more readable type. Illustrations are not allowed. Name, address and telephone number are always one part of the copy. Trade-marks may be inserted in most directories. Properly designed, an informational ad is an effective seller.

Most effective of all classified listings is the display type. It most closely resembles a newspaper advertisement. Illustrations, trade-marks, selling copy, slogans, information about products, service locations and brand names are possible here. A wide variety of type

(Continued on page 74)

Tamkel's Repair Shop, 3 Auburndale Dr. BAlfr 6-1395
Teitelbaum's Tire Shop, 10 Main St. Park 6-1295
TETRAULT'S, 2 Madison St. OKla 8-7243
Thames K., 1011 Mada Av. DOuglas 3-2192
Thomas, J., 132 Rice St. OKla 8-9372
Tillman's Service, 84 Bryant St. POplr 3-5413
Tony's Garage, 148 W. Ark Av. POplr 5-3471
Twickenham Bros., 17 Old St. BAlfr 6-2981
Tyler's Auto Shop, 412 Rice Av. POplr 9-3251

SHIPPEE'S GARAGE

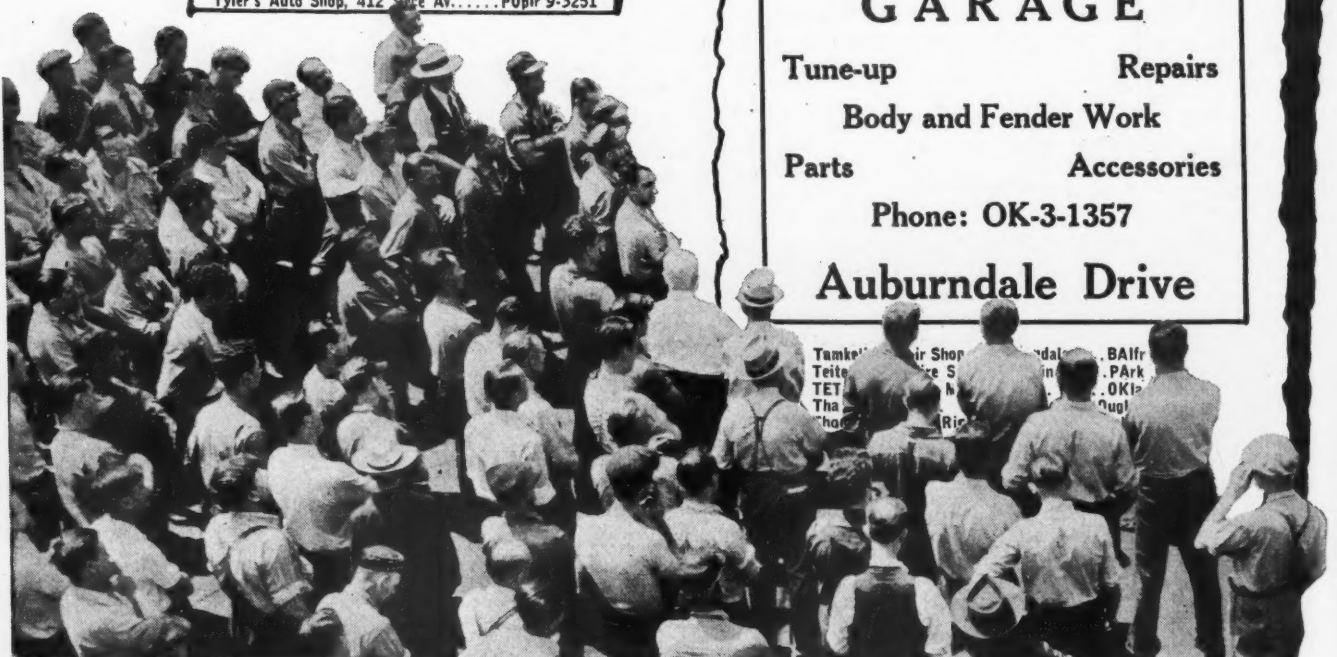
Tune-up Repairs

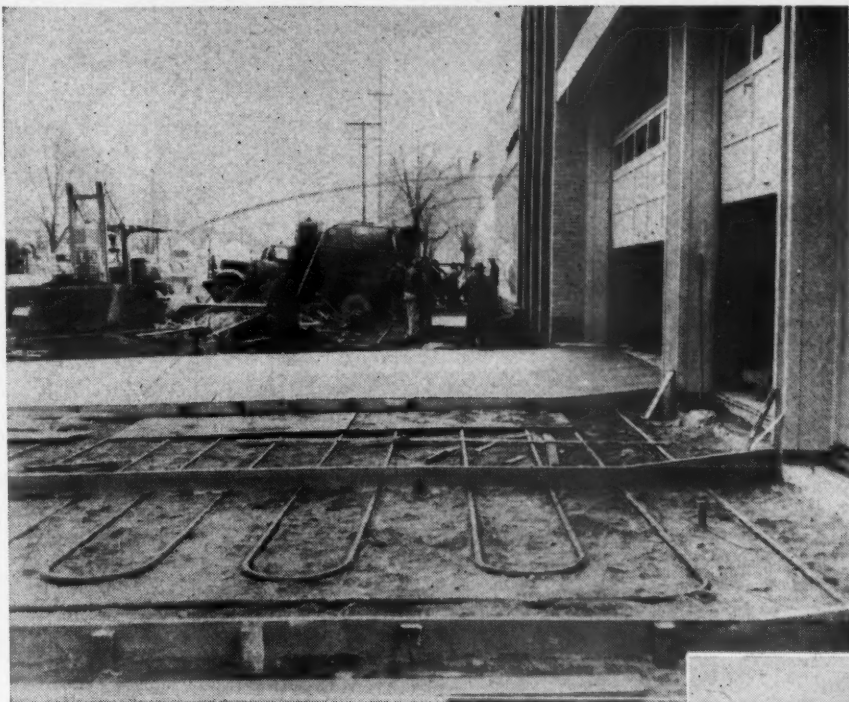
Body and Fender Work

Parts Accessories

Phone: OK-3-1357

Auburndale Drive





A Salt Lake shop frees its approaches from ice with a new radiant heating system

The Bennett Motor Sales, Ford Agency in Salt Lake City, Utah, boasts radiant heating inside and automatic snow melting sidewalk and driveway outside. Hot oil flowing through sinuous wrought iron coils melts snow and prevents the formation of ice.



HIDDEN heat from hot water piping systems buried in concrete will insure warm dry floors inside and a snow-free driveway and sidewalk outside for an attractive Ford agency building just completed at Salt Lake City, Utah, by the Bennett Motor Company.

Like many other dealer agencies and repair shops throughout the country, Bennett Motor Company uses a radiant heating system to establish comfort for employees and customers in its new building. The firm also took advantage of a similar method of heat engineering to keep the driveway leading into the service and repair department and the front sidewalk free from ice and snow in the worst winter weather.

The building, of brick and concrete, construction, contains approximately 34,000 square feet of floor area with radiant heat.

The architects, Young & Hansen, Salt Lake City, designed this building to be as functionally efficient as it is attractive. The front has a generous amount of window space for the auto display room. Three entrances lead from the street into the service area, the well-lighted and spotless interior of which is clearly visibly through large plate glass windows to passersby.

To install the radiant heating system in the concrete floor, wrought iron pipe—used in most radiant heating systems because it resists corrosion and bends and welds easily—was fabricated in the form of grids and positioned on the ground fill. In all, six grids were used to achieve "spot" control of the comfort conditions as desired in various areas of the building. The grid in the service-repair garage was patterned on a "herringbone" design. This was done so that lifts and

SNOW SHOVELLING

floor islands (installed at angles) could be by-passed without bending the pipe.

After the coils had been welded, they were tested for 24 hours under 200 pounds air pressure before being covered by the concrete floor.

Hot water for the radiant heating pipes is supplied from an oil-fired boiler. Pumps force the water through the coils.

The snow-melting system in the driveway and sidewalk was fabricated of wrought iron pipe bent into sinuous coils. Hot oil is forced through these coils to warm the pavement much in the same manner as the floor is warmed by the radiant heating system. When it starts to snow, or in the event of rain turning into ice during sub-freezing temperatures, the melting system goes into action to keep the driveway and side-

(Continued on page 78)



Larry looked the frail man up and down, and his lips curled in a grin that was almost a sneer. "You mean when you get up around thirty or thirty-five?" he said.
 "No, Grease-ball," said the man. "I mean sixty to sixty-five."

Pop Scores on a Miss

LARRY lifted a shaft out of the transmission on the bench before him and nodded toward the door of the shop office.

"Look at old Simon L. O'Neill," he said to Tommy Winters. "Standin' there lookin' at his watch. What's he want me to do go over and apologize for bein' ten minutes late this mornin'?"

"You were half an hour late," said Tommy.

"So you're checkin' up on me, too, are you? Well, if Pop starts givin' me any of that last warnin' stuff, I'm walkin' out of here so fast he'll think a jet plane got loose. And what's more —" He did not finish the sentence for Pop was on his way across the shop. Pop

watched Larry working for a moment or two, then fixed him with a questioning stare.

"Tryin' to pull a fast one on me?" he asked.

Larry looked around quickly. "How?" he demanded.

"I saw you comin' outa the high school last night," said Pop. "Thought maybe you was registerin' for a night course in automobile mechanics so you could show me up sometime."

Larry snorted. "There's people around this here shop that need a little education worse 'n I do," he said.

"That's a question," said Pop. "But, if you wasn't after education, what was you doin' in the high school?"

**Pop easily made this high speed miss on a
high mileage Pontiac look like ten cents.
Like many tricks in the mechanic's bag
this one is quick if you know the answer**

by J. EDWARD FORD



MOTOR AGE

BASIC COURSE FOR

MECHANICAL TRAINING

"Well, if it's gonna take a load off your mind, I was just registerin' to vote."

Pop chuckled. "I'd be careful about votin' this fall, if I was you," he said. "They're gonna have voting machines in Glenrock for the first time. You don't wanta go and get one of them machines all fouled up."

Larry slammed a wrench down on the bench and swung around to face Pop squarely. "Look, Pop," he said, "I can take just so much of your ribbin'. Then I get sore, see?"

"May be a good thing, too. You burned up last week when I told you how you messed up the timin' on that Pontiac coupe, but I noticed you didn't pull no more boners for almost a whole day."

"Anybody can slip up once in a while. I know Pontiacs like I know my own social security number. I didn't drive nothin' but Pontiacs for years. I could take one apart and put it together again with my eyes shut and one hand tied behind my back."

Pop glanced toward the shop door. "Well, here comes your chance," he said. Larry and Tommy turned to see a 1937 Pontiac sedan rolling through the door. "See what he wants," added Pop. "I gotta run downtown."

Larry hitched up his coveralls and waited until Pop was halfway to the shop office. "Don't hurry back," he muttered. "Let's give *this* customer a break."

Tommy laughed. "Pop didn't hear that," he said. "Maybe you ought to go tell him again."

Larry threw him a poisonous stare. "Aw drop dead," he said. He wiped his hands on a ball of waste and went over to where the customer, a little man with mild blue eyes, stood beside his car.

"Do somethin' for you?" asked Larry. His tone was a challenge.

"Yes," said the customer. "My car has an erratic miss. I notice it most at high speed."

Larry looked the frail, little man up and down, and his lips curled in a grin that was almost a sneer. "You mean when you get up around thirty or thirty-five?"

he said without taking his pipe out of his mouth.

"No, grease-ball," said the little man. "I mean sixty to sixty-five."

Larry was so taken aback that he was not ready with a retort, and the customer went on. "Is there anybody around with brains enough to fix it?"

Rounding up his scattered wits, Larry was on the point of telling the little man to take a flying jump at the moon, but he suddenly recalled that he was working for Pop O'Neill and that Pop disapproved strongly of talking tough to customers, no matter how adept they were at boring under a repairman's skin.

"Well," demanded the little man, "is it 'yes' or 'no.'"

"Of course we can fix it, said Larry. "What do you think we're in business for?"

"As far as I can see, it's only because there isn't any law against it. Now show some life. I want this car by noon. Understand?"

Larry, still at a loss for suitable words, merely nodded but, as the little man strode out of the shop, Tommy saw Larry working his lips soundlessly. And, when he came back to the bench where Tommy was disassembling a fuel pump, he was still mumbling.

"Picked on the wrong guy that time, didn't you?" asked Tommy.

"That's enough outa you," snapped Larry. "Wheel that Pontiac over to an empty bay and do a complete ignition job on it. Check the plugs and the spark coil and the condenser. Then put in new breaker points."

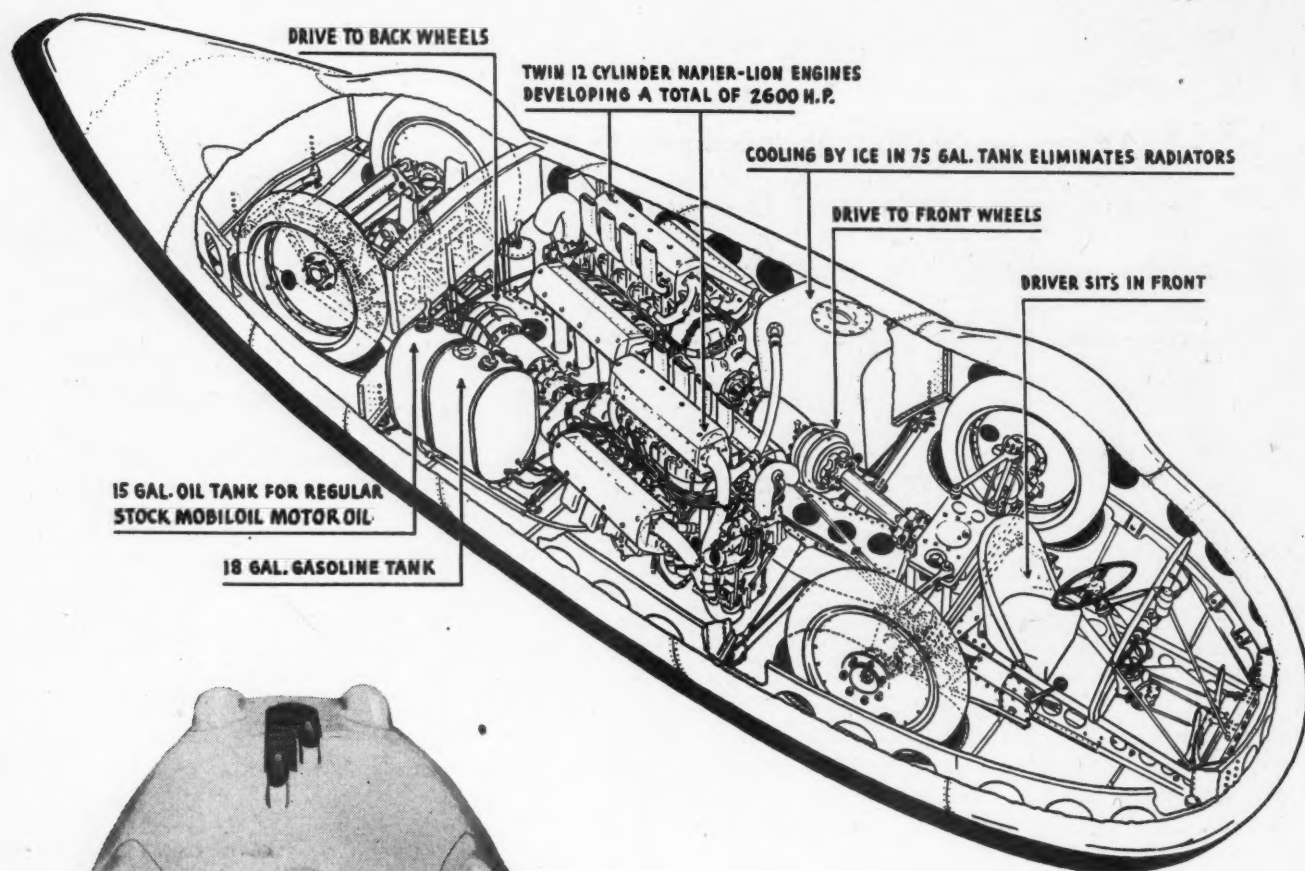
"Aren't you going to put the distributor on a test stand?"

"I was comin' to that. Get started, will you?"

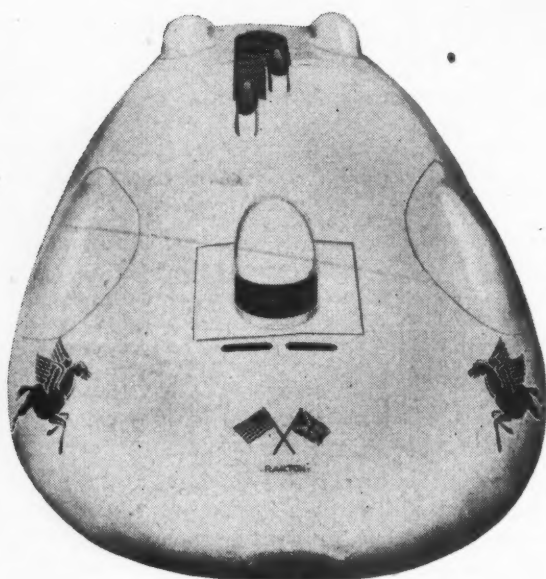
Tommy worked steadily for the next hour and a half. After cleaning the spark plugs and checking the condenser and coil, he removed the distributor, installed new points, then put it on the test stand. As he watched the dials of the machine, his brows clouded in a puzzled frown.

Hopefully, he switched the test machine, trying to get the correct cam angle, but the frown persisted. Then he switched off the tester and walked over to Larry. The latter looked up from the transmission which he was now reassembling.

(Continued on page 92)

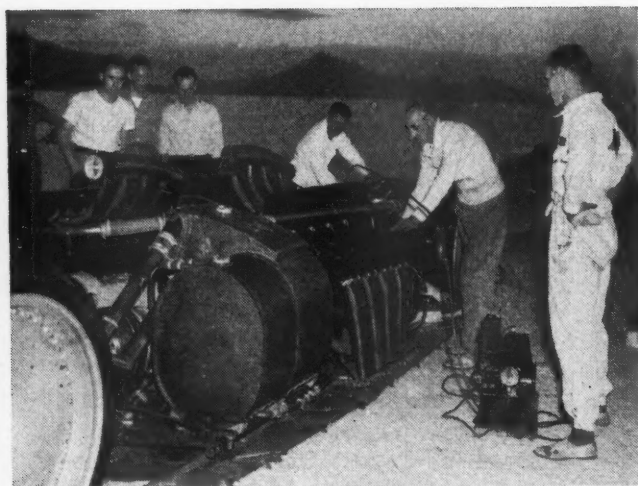


Sketch of the Railton as originally designed. Some changes were made but the car is basically the same as when it established the 1947 record.

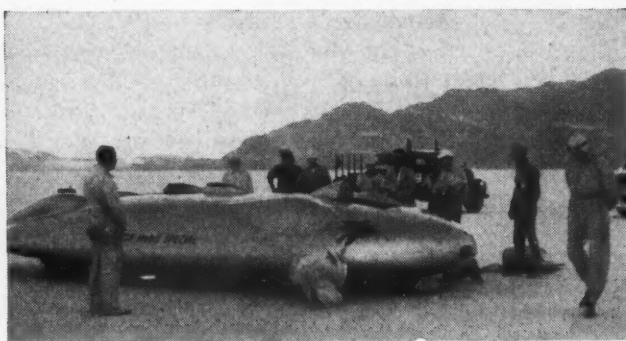


Cobb Breaks

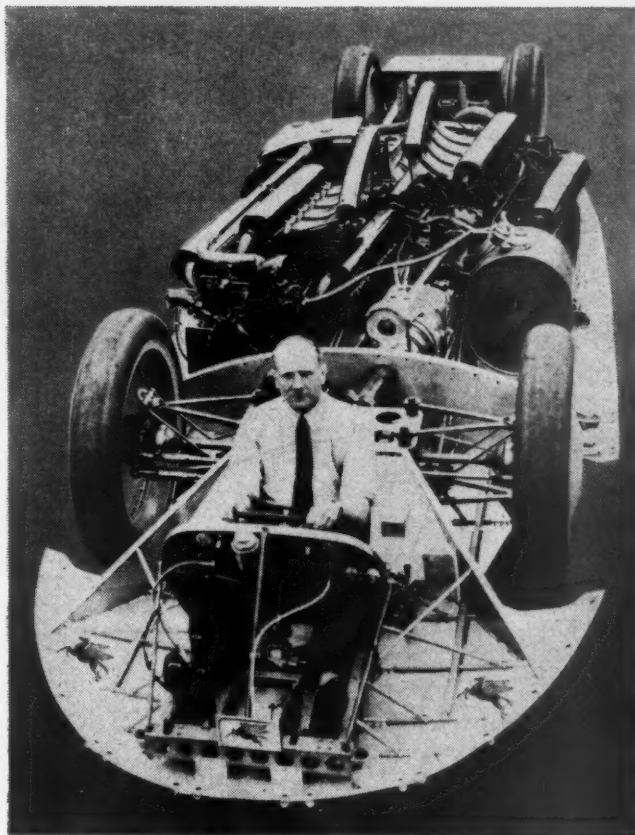
He shifted into second at 120 mph, into



Above. Cobb at the wheel with the aluminum body in place.
Below. R. Railton, designer, starts the motors for the record run.



At the end of the first run. Cobb paces back and forth as mechanics service the racer for its 400 mph dash.



Cobb and the Railton ready for action. Protuberances in the center are exhaust stacks—in the rear, wheel housings.

World Speed Record

high at 240 mph, and reached an unofficial top speed of 415

JOHAN COBB, a 47-year-old Londoner, rode his modern covered wagon—a 7700-pound, 2600-hp stream-lined racing car over the salt plains of western Utah at speeds faster than man has ever traveled on land. His new speed record is 394.196 mph and at one time he hit an incredible 415 mph.

Whereas the '49ers considered 18 miles an exceptional day's journey, Cobb covered the same salt flats at better than 6½ miles per minute, roaring through the vital measured mile of the 13½ miles speed course in less than nine seconds.

Faster than all except the fastest military planes, the tall nerveless Briton sent his \$100,000 twin-engined speedster through the measured mile in two dramatic dashes—the first against a headwind at 385 mph

and the return run with the wind favorable at slightly over 403 mph.

It was on the return run that Cobb nearly met disaster. Earlier test runs accompanied by sudden braking after leaving the measured mile had necessitated repeated scraping of the ordinarily marble-smooth surface of the speedway. The scraping left ripples in the salt, scarcely noticeable to stock cars speeding at 100 miles per hour over the course—but magnified enormously when encountered at 400.

"It was like riding in an infuriated vibration machine," Cobb said later, "I have never experienced such a buffeting."

Twice as Cobb sped through the wavy area, his mount bucking and twisting like a rodeo broncho, his head was slammed against the roof of the aluminum and plexiglas canopy which encloses the seat.

"They were terrific knocks," he explained. Fortunately we were out of the rough area in a few moments, but it was a bit sticky at the time."

The record run climaxed weeks of preparation and disappointments. Cobb came to the salt flats early in August. Thunderstorms had drenched the salt and no tests could be made until the course had regained its usual rock-like surface. After a few preliminary tests, Cobb pronounced his car ready for the record attempt, only to be thwarted by a stiff wind which blew him 100 feet off the track on a preliminary sprint.

Another official attempt was scheduled, but this time an oil line clogged and a camshaft broke with the car hitting 334 mph. Undaunted, Cobb sent to England for new parts. They were installed and the car again rolled to the pits for the record try on Sunday, September 14.

More than 2000 thrill-seekers crowded the barrier opposite and 2000 feet away from the measured mile as Cobb shot the turtle-backed racer over the black line marking the center of the 100-foot wide track at 375 mph. It was disappointingly slow for a man with his heart set on a record of 400 mph or better, and Cobb returned to the timers'

tower to explain that his cooling tank had been damaged and a gaping hole torn in the underside of the metal hull by vibration and wind. Again the attempt was postponed, with a rain forecast adding to his worries.

Repairs were rushed to beat the predicted storm and finally at 4:30 p.m., September 17, Cobb climbed into the cockpit and gave the signal for the north-south run.

With 385 mph clocked against the wind, Cobb was jubilant as he climbed out of the cockpit in the south pits. Turning to Reid Railton, who designed the car, and P. T. Taylor, its British builder, the speed king smiled and said, confidently: "We'll hit better than

(Continued on page 96)

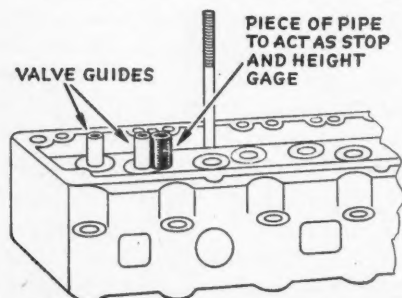
We Pay 5 Bucks For SHOP

Surer than the races, steadier than hitting the jackpot. The faster you write 'em, the richer you get. We need 'em bad if they're good. So grab your pencil and spike yourself a fin. Send along your idea—write it or draw it, anyway that we can understand it—some short cut to make a job easier or faster, some special tool you can't buy, some kink of your own. Of course, we won't accept any printed by any other publication.

Valve Guide Removal

Here is a short cut that we use when overhauling overhead valve jobs in our shop. It is a real time saver.

Before we remove the old valve guides we cut a few pieces of pipe to the length that the guides project above the head. When we are installing the new guides, these



pieces of pipe act as height gages and all the guides can be pressed in to the same height.—James F. Lang, 1702 Kentucky Ave., Fort Wayne 3, Indiana.

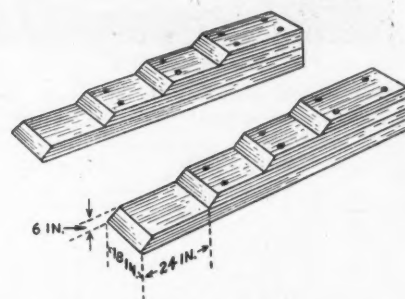
Cadillac Belt Replacement

Replacing a fan or generator belt on the 1936 Cadillacs, Models 70 and 75, is a tough job, due to cross member interference. It involves removing the front engine mounting bolts and jacking the engine up (this may take as much as 1½ hours).

We've done it in 15 minutes using our own system. We remove the nut holding the crankshaft pulley in place, and loosen the generator belt and fan belt adjustments. Then we slide the crankshaft pulley forward, enough to remove the belts. The crankshaft pulley is a sliding fit and it will move easily. If prying is necessary, no damage will be done because the timing case is a heavy casting. The new belts can be easily installed and the pulley pushed back in place and secured.—Al Ruedy, c/o United Auto Service, Oakland 12, Cal.

Improvised Ramp

A small shop often has a need for an extra lift, although the cost



makes it impossible. A wooden ramp can be made in the shop, however, that will raise the front end very satisfactorily.

About 40 ft. of 18 x 6 in. lumber is necessary. This should be cut into 2 pieces, each 8 ft. long, 2 pieces, each 6 ft. long, 2 pieces each 4 ft. long, and 2 pieces, each 2 ft. long. Each of these pieces should be tapered at one end. The ramps are then spiked together as in the illustration, each step having a travel of 2 ft.—New Jersey Subscriber.

Painting Tires

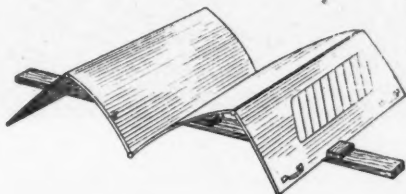
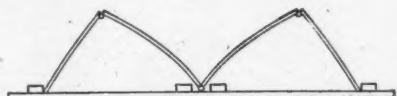
Here is an idea which we found to be a time saver. When we re-finish a car and it comes time to dress the tires, we take a trim ring or plastic white-wall and snap it onto the wheel. The tire may then be sprayed with no danger of paint getting on the wheel.—Gordon L. Zehr, Marfa, Texas.

KINKS

Hood Remover

We've found this hood remover to be very handy, especially when removing the older type with a hinge down the center.

Take a 2 inch board, 6 ft. long, and nail 2 short blocks 4 in. apart at the center. Then nail a block 4 in. from each end. In operation, the



board is slipped under the raised hood, with the hinge center line between the central blocks and the side panels resting against the outer wood blocks. Two men can then easily lift off the heaviest hood without marring the paint.—*Elmer H. Cook, Paddleford Garage, 774 Emerson St., Palo Alto, Cal.*

Removing Ford Center Radio Aerial Leads

Installing or removing Ford center radio aerial leads can be made easier and faster by using 15 in. of an old brake rod with the yoke still attached. Cut the ends of the yoke off, back of the pin holes, and bend together slightly so it will fit

the aerial lead just behind the connector. Then, bend the rod in an "S" shape to clear the windshield wiper motor and the ventilator regulator handle. By pushing the aerial lead up and twisting on the loose end, many minutes can be saved.—*Ken Bracewell, Sturgis, So. Dakota.*

Removing Oil Pan On 1947 Studebaker

It is possible to remove the oil pan of the 1947 Studebaker without having to remove the engine from the car with the following procedure.

Remove the upper and lower radiator hoses, remove the hood by removing the four nuts that fasten it to the hinges. Unfasten the gasoline line at the fuel pump and the flexible oil gauge line at the top of the block. Unfasten the exhaust pipe at the manifold flange and the accelerator control rod at the clevis above the starter. Remove the four engine mounting bolts, two at the front cross member and two at the cross member under the transmission. Put lifting eyes in place of the number one and number six spark plugs. With a chain hoist raise the engine at least four inches. Remove the oil pan cap screws and tilt the oil pan down at the front, slide the oil pan forward and out.—*G. T. Henry, Service Mgr., Reiley Motors Inc., Studebaker Sales, 239 East Lancaster Ave., Wynnewood, Pa.*

Replacing Coil Springs

Coil pull-back springs are usually located in hard-to-reach spots. The usual method of hooking or unhooking them is with pliers, a method that is inadequate and clumsy. To overcome this difficulty, I worked out the tool shown in the sketch.

For light springs, such as carburetor, emergency brake, clutch

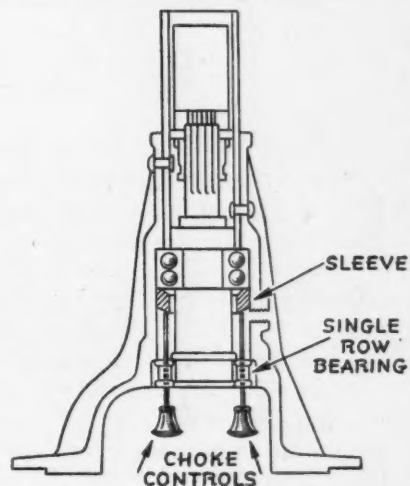


pull-back springs and so forth, a six to eight inch tool can be made from light gage welding rod. The stronger the tension of the spring the heavier the tool must be.—*D. W. Brentlinger, P. O. Box 395, St. A, Richmond, Cal.*

Chevrolet Lock Ring

Here is a simple method that we have worked out for pushing the lock ring back in place on a Chevrolet pinion.

We take two old choke control buttons, complete with 7 or 8 in. of wire still attached, and insert them



(180 deg. apart) between the pinion teeth and through the single row bearing. They can then be maneuvered until the lock ring is pushed into place and secured.—*Art Raney, 7884 SE 13th Ave., Portland 2, Oregon.*



A Date for More Business

Here is another Motor Age advertising
hint for shop owners and dealer agencies



CALENDARS have taken their place with watches and cars as absolute necessities in the American way of life. As the car owner values his vehicle because it saves him time, and his watch because it tells him the time, so he holds his calendar dear because it places him in time and reminds that there is less time usually than he thinks.

Automobile and accessory dealers have discovered this and are capitalizing on it to sell their products by incorporating advertising on calendars to present to their prospective customers. The rush to buy calendars is greater in the automotive industry this year than ever before. Dealers are sending calendars as dignified firm Christmas greetings, personally handing out small sizes to the housewife, passing around the larger wall hanging styles, and placing Jumbo size calendars in prominent public places.

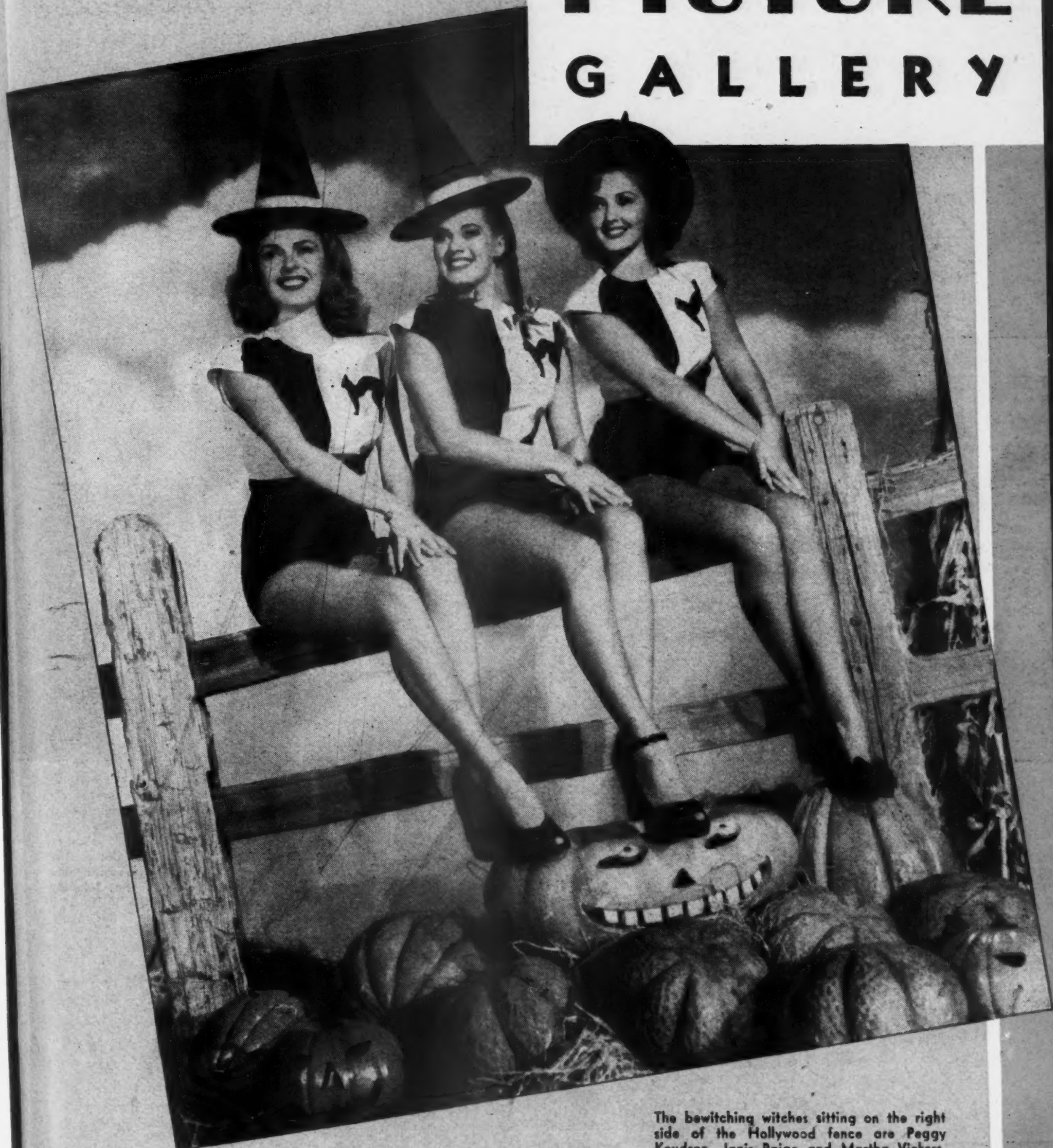
The vast prospective sales field can be covered completely through calendar distribution and dealers are

increasing the use of calendars to promote and cement the goodwill of their prospects and customers as well as to keep their name, telephone number, street address and trade mark before buyers.

In a study by the U. O. Colson Company of Paris, Ill., one of the large manufacturers of calendars, it was found that there are over 200 ideal commercial spots to hang calendars in an average sized town of 5000 to 10,000. Stock yards, automobile repair shops, lumber companies, car dealer agencies, feed stores, hardware stores, drug stores, funeral homes, clubs, schools, legion homes, markets, hospitals, hotels, super markets, dry cleaners, shoe stores, furniture stores, cafeterias, bus terminals, filling stations, fire and police stations, city halls, restaurants, barber shops, bowling alleys, coal dealers, factories are only a few of the available spots in which to hang free advertising. It does not include the almost unlimited possibilities

(Continued on page 98)

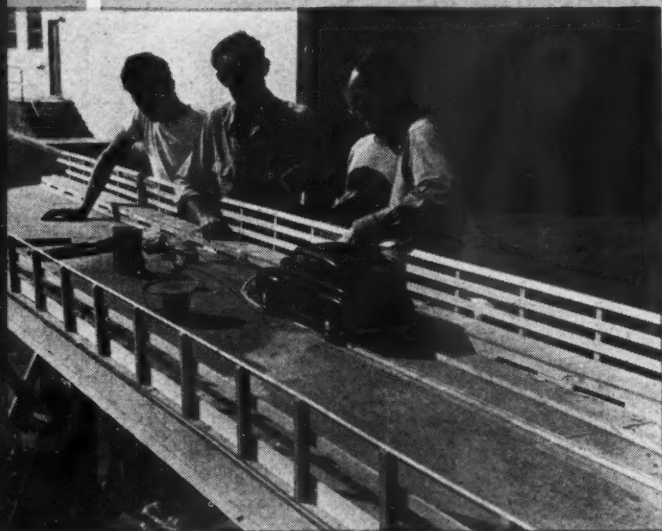
MOTOR AGE PICTURE GALLERY



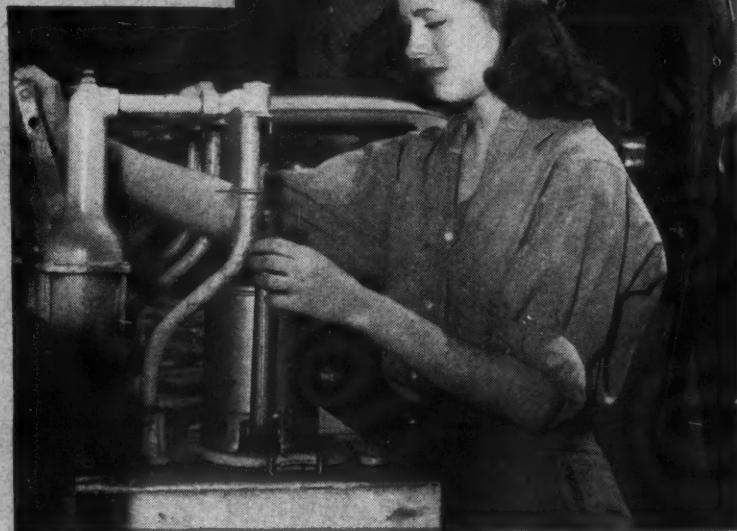
The bewitching witches sitting on the right side of the Hollywood fence are Peggy Knudson, Janis Paige and Martha Vickers.



Kenny Holmboe, Charleston, W. Va., is shown at right getting the victory signal as he crosses the line a second before E. Miller of Akron, O., and wins the 10th annual Soap Box Derby, held at Akron, Ohio.

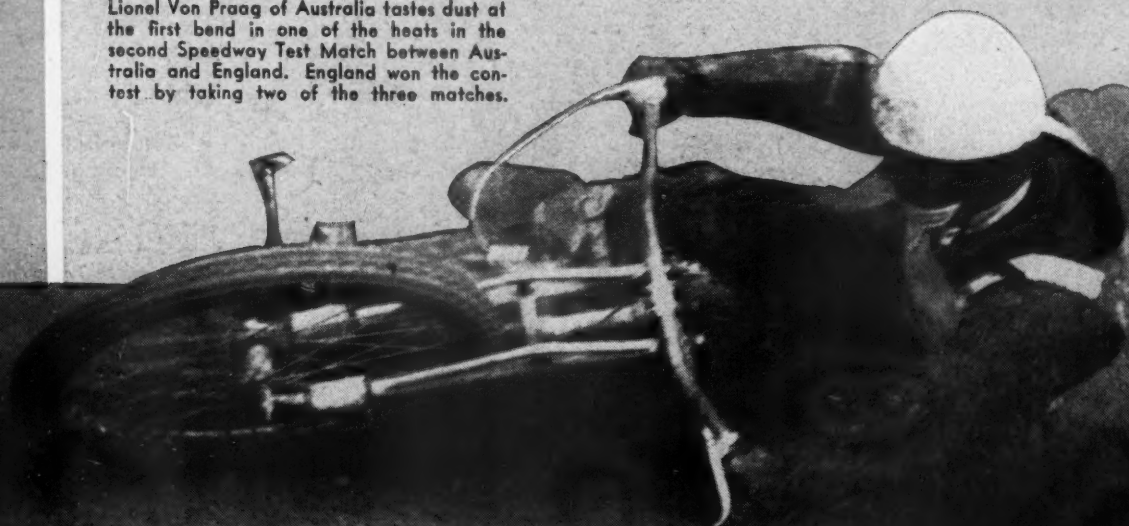


Hollywood craftsmen have carefully engineered this set to film an accident. The scale model sedan was given a push down the tracks, tripped a trigger and set off a charge of powder and gasoline. Low camera angle cut out the tracks.



Girls in the automotive business enliven the plot of "Your Red Wagon," new film, which RKO will release in November. And if any disgruntled person writes in to complain that Cathy O'Donnell didn't do this or that just right, she is going to be good and sore, because, in training for this role she spent the better part of three shifts at a service-station perfecting her "business."

Lionel Von Praag of Australia tastes dust at the first bend in one of the heats in the second Speedway Test Match between Australia and England. England won the contest by taking two of the three matches.



Cobweb Hall was the center of action at the New York City fire department show in Madison Square Garden. Here firemen race up scaling ladders to the upper floors of the 60 foot high temporary tenement.



It's a double barrel of fun for Jane Adams, pretty escort of the WJZ "Darts for Dough" program, as she rides Hollywood's newest go-cart, called the Funnycycle. You can make one from old bike parts and two barrels. Handy for rolling lawns, too.



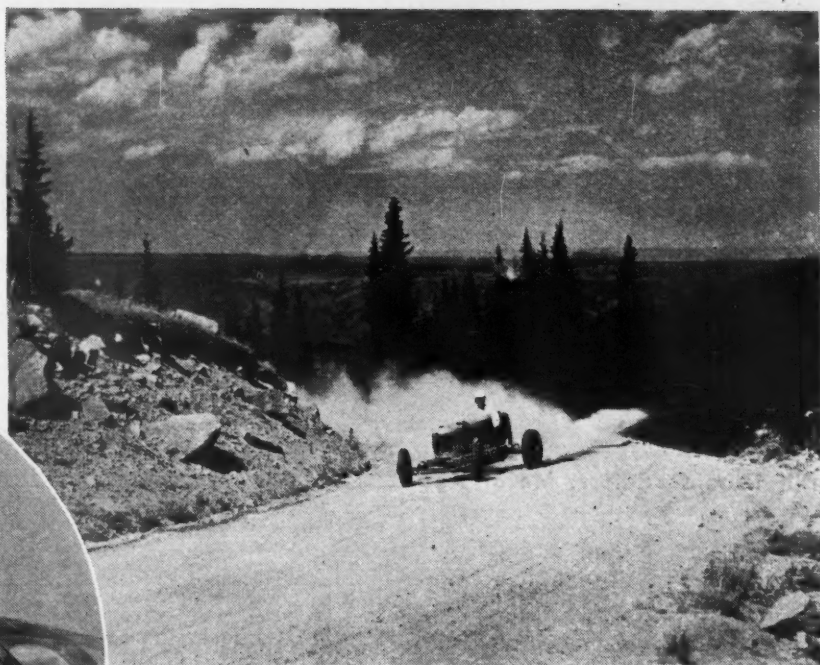
Ken Knight of Walnut Ridge, Arkansas, is receiving the Tinnerman Trophy from A. H. Tinnerman and G. A. Tinnerman. The race was for P-63 Kingcobras over a 15 mile closed course. Knight averaged 352.1 mph. His cash purse was \$2500. He also received the silver Paul Revere Bowl Trophy and a \$400 gold watch.



"Could it be that thou hast eyes and see not?"

Right. This switchback gives a good idea of what drivers on Pike's Peak have to contend with. The car is just coming out of the skid.

Below. Louis Unser, after winning his eighth victory, smiles from behind the wheel of the car which once again took him rapidly up to the top.



1947 PIKE'S PEAK Climb

LOUIS UNSER, known around Pikes Peak as "the old man of the mountain," demonstrated the value of the split second when he copped the 1947 annual Labor Day Hill climb up the famous mountain for his eighth triumph.

Unser, 51-year-old bushy-headed driver, crossed the 14,000-foot high finish line just two-fifths of a second ahead of Al Rogers. He pocketed the \$3,000 first money offered by the Hill Climb association.

Unser, driving a 425 hp Italian-built Maserati in which he set the course record last year, roared up the 12-plus miles of treacherous winding grade in 16:35.4.

Rogers, 39-year-old driver who won the 1940 hill climb, whipped up the peak in 16:35.8 in his 220 hp Offenhauser which was first to roar away from the starting flag.

Unser's Maserati was owned by Dick Cott, of Detroit, whose second entry in the race took third. Russ Snowberger, veteran of the Indianapolis speedway, was clocked at 17:24.07 in Cott's 220-hp McDowell.

The course record of 15:28.07 was set by the winning Maserati last year as the "Old Man" won his seventh Pikes Peak Hill Climb. Predictions that the improve-

Louis Unser, driving the same 425 hp Maserati in which he established the course record last year, won the Pike's Peak Climb for his eighth victory on the rugged course

ments in racers would bring a new record this year faded when the daredevil drivers found the winding course "extremely slippery" with dry sand and loose gravel.

The race was so close that the veteran driver's victory was not declared official for more than an hour after the last car had negotiated the 3,000-foot, cliff-lined ascent.

Unser's average time was 44.94 mph, according to official A.A.A. timers, and Rogers averaged 44.92, just two hundredths of a mile-per-hour slower. If the

(Continued on page 104)



CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

Bill Toboldt, Editor, Motor Age

Noisy Valve Action On La Salle Overhaul

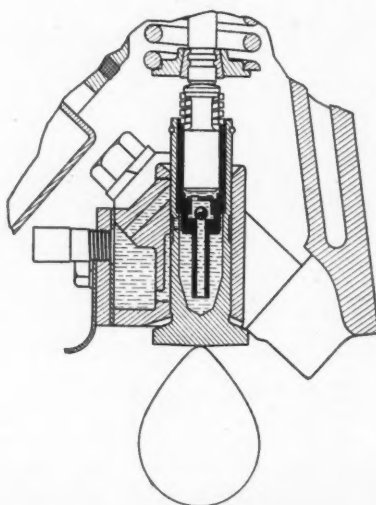
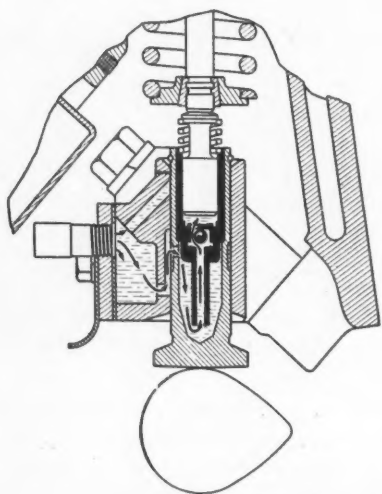
Recently I ground valves and installed new lifters and plungers on a 1937 La Salle engine. After assembling, the valve action was very noisy. It remained noisy for about 200 miles so I took all parts out and washed them carefully. Again assembled motor. Result, as much noise as before. Consulted local Cadillac Co. and was told to remove valve action and wash carefully. Performed this job and valves are still noisy. Any suggestions will be highly appreciated. Virginia subscriber.

FIRST of all, the difficulty you are experiencing with a noisy action on the 1937 La Salle might have been caused by the mixing of the parts. The plungers and dash pots are not interchangeable. The num-

ber on the dash pots casting should correspond to the number etched on the plunger. If you mixed these up when you did the carbon and valve job, it is quite probably the cause of the troublesome noise.

Another cause of noisy action is high oil pressure, which may lift the entire hydraulic unit against the plunger spring, permitting excessive plunger movement and wear. Low oil pressure permits oil release leakage between the plunger and the cylinder to exceed the oil feed to the ball check. Oil pressure at the supply pipe should be 3 to 5 lb. when the gage on the instrument board reads 12 to 15 lb.

If, after checking these points, and you are absolutely sure the mechanism is clean, the trouble is undoubtedly due to worn parts or the fact that you have mixed the plungers and dash pots.



Oil Burns Out at Clutch Housing

One of my best customers has a 1940 Buick, Series 50, which has an oil leak in the rear of the engine somewhere, and the oil runs out of the clutch housing. I have checked the rear main bearing and, as far as I can see, the bearing fits perfectly. The engine uses oil at the rate of 1 qt. to 200 miles of driving, but I can't find how the oil gets out. I am sure there are no outside leaks, and yet the oil continues to come out of the clutch housing.

Can you tell me how the oil gets into the clutch housing if the rear main bearing does not leak? Tennessee subscriber.

IF the oil is running out of the clutch housing, and you are sure the rear main bearing fits properly so that the oil cannot leak there, then it is a safe bet that the oil is leaking at the camshaft. A metal disk is used to close the rear of the camshaft rear bearing, and, if this disk does not fit tightly, the oil from the bearing will leak out and, of course, run down into the clutch housing.

In order to seal the edges of this disk, it will have to be removed, and, in removing, it is usually damaged so that a new one has to be installed. Seal the edges of this new disk before it is installed, using a hard-drying gasket cement. This will eliminate any further leaks at this point in the engine.

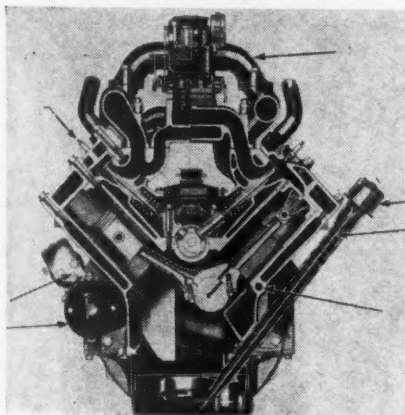
Starter Commutator And Brushes Burn

Can you tell me why the starter commutator and brushes burn so quickly on the 1940 Chevrolets and is there any way this trouble can be cured? I have had several of these cars do this. One was a 1941 model Chevrolet. I have had to remove the starter twice and true up the armature and install new brushes. Iowa subscriber.

THE trouble you are having with the later model Chevrolets can be easily corrected. The cause has been found to lie in the starter motor itself and careful checking of the unit generally reveals the trouble. The most common of the causes of this trouble are improperly soldered connections of the armature windings to the commutator and weak brush springs. Grounded field coils may also be responsible. Correcting any of these conditions you find almost always cures the trouble.

In most of these cases, the starter switch is also badly burned. I would also check for this condition, and replace the switch if it should prove necessary.

Cadillac Throws Oil Out the Filler Pipe



We have a 1938 Cadillac Sedan that has been throwing oil out through the filler pipe. This motor has been overhauled, 2 sets of rings installed, breathers cleaned, oil pan removed, and oil trays checked and rechecked, still it throws oil out through the filler pipe after reaching speed of 60 or over. The Cad-

illac Garage has had this motor up twice for check up, and replaced both sets of rings and ground valves. We have taken this same car and also checked breathers, lines, and all parts that we thought might cause this trouble, but to no avail.

We are at a loss what to do further and would like your suggestions on this problem. Mr. Steve Jellish, Shop Foreman, Ashland Body Works, 215 Second Avenue, West Ashland, Wisconsin.

IN regards to the trouble you are experiencing with the 1938 Cadillac it would seem that there is one point you have failed to check carefully for the only real reason why oil will be forced out of the filler pipe is because of pressure being built up in the crankcase. This generally is the result of excess blow-by past the piston rings or stoppage of the crankcase ventilating system.

I note you say you have cleaned the system and have also installed two sets of rings. I would suggest you hold your hand over the breather pipe and then race the engine a little bit and if you feel excess pressure building up against your hand, it would seem that it would be necessary for you to recondition cylinder walls and install new pistons in order to reduce the amount of blow-by.

If your cylinders are round and true, then undoubtedly there is still some stoppage in the breathers which you have failed to eliminate.

Ford V-8 Pumps Water Out the Overflow

I have a 1935 Ford V-8 that pumps water out through the overflow. Have put on larger radiator and it still acts the same. This car has been in several garages and no results. What would you advise? Minnesota subscriber.

THERE are two conditions which might be responsible for this trouble and which should be checked. The first is the condition of the water pump shafts. If these shafts are worn so that the pumps

(Continued on page 109)

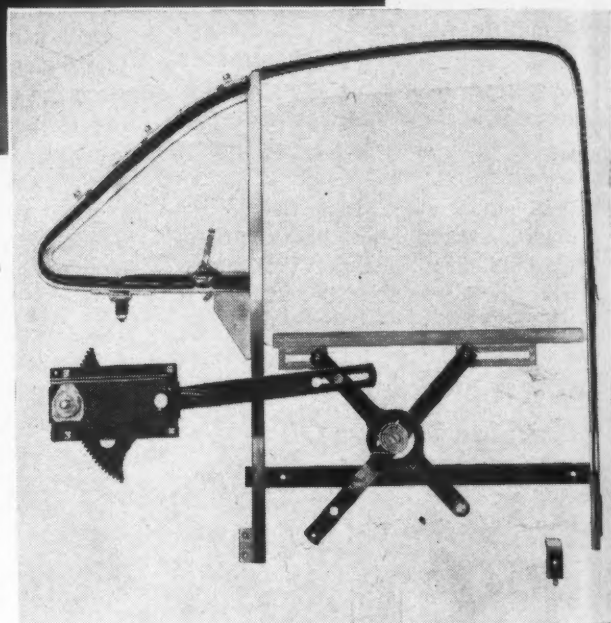
BUTCH





Installing glass in the windows and windshields on the current Packard Clipper sedans and coupes

by **RICHARD L. REDDY**



GLASS replacement procedures are the same for all the Packard Clipper models. These cars have but two windows on each side, the rear door window on the sedan incorporating a ventilating window within its frame assembly.

The windshield assembly consists of two glass panels inserted in rubber weatherstripping. This assembly is held in place in the body windshield opening by means of the windshield garnish molding and the division bar. The outer chrome molding clips over the lip of the metal flange around the windshield opening. It is not necessary to remove the chrome molding to replace either windshield panel from the opening.

Replacing Glass

To replace one or both glass panels, the complete glass and weatherstrip must be removed as follows:

The windshield wiper blades and arms are removed. Masking tape is applied on the instrument panel top to prevent damaging the finish. The center division bar screws are removed, releasing the vertical chrome strip from the front of the windshield. The garnish molding is removed, as is the rubber weatherstrip from around the lip of the windshield body opening.



Fig. 1. Putting windshield in place, using a piece of string to seat weatherstrip.

Fig. 2. Skeleton view of front door window mechanism, with vent window in position.

Fig. 3. The rear door of the sedan. The vent window is in the door on this model Clipper.

Fig. 4. Inserting replacement glass in the front door, with door inner trim panel removed.

right front corner of the assembly.

All traces of the old sealing compound are removed from the windshield opening flanges and fresh sealer is applied. The glass, in its weatherstrip, is held firmly against the windshield opening flanges. One end of the previously inserted cord is then pulled down the right side of the glass, across the bottom and up the left side. During this operation the windshield must be held firmly against the windshield opening flanges so that the lip of the rubber weatherstrip will be drawn over the lip of the chrome strip. When the cord has been pulled out within approximately 4 inches of the center strip, both ends of the cord should be pulled quickly to snap the center section out over the lip of the chrome strip.

Any trim material that has been loosened while working on the glass should be tacked or cemented in place. The garnish molding is replaced by pressing it tightly against the weatherstrip while the molding screws are put in place, being sure that the screws are pulled up evenly. A helper will be needed to hold the center strip in place in front of the windshield while the inside vertical strip is being installed. The screws should be pulled up snugly but not too tightly. all excess sealer is removed and the glass cleaned. A water test will indicate whether or not there are any leaks. Minor leaks can usually be corrected by prying under the weatherstrip and forcing in a small amount of sealer.

If, for any reason, it is necessary to remove or replace the chrome molding around the windshield, it can be pried off the windshield opening flanges after the glass has been removed. When the molding is replaced, or a new one installed, sealing compound must be used between it and the windshield opening flanges, removing the old sealer

before applying the new coating of sealing compound.

The first step in removing the front door drop glass is to unsnap the concealed door trim panel fasteners around the bottom of the door and up the sides as far as the arm rest. The exposed screw at the bottom of the door panel is also removed. The door window glass stop which is fastened (with 1 screw) to the door inside panel at the rear of the door is removed.

(Continued on page 120)

on Packards

The glass is removed by pushing it inward at the upper outside corner. The weatherstrip will probably adhere to the body as it is sealed in place with sealing compound and this must be broken loose.

Before the replacement glass is installed, it should be inserted in the rubber weatherstrip (which has been previously coated with sealer). A piece of strong cord is inserted completely around the outer lip of the weatherstrip, letting the crossed ends protrude at the

Wholesalers' Local Advertising Problems Discussed by Auto Advertisers' Council

To bring the many advantages of his services to the attention of all automotive repair shops, the automotive wholesaler is more and more realizing the importance of using planned local advertising.

This point was brought out in discussions at the fall meeting of the Automotive Advertisers Council. The meeting was attended by over 40 advertising and sales executives of leading manufacturers of automotive parts, tools, equipment, accessories and chemicals.

The subject of wholesaler advertising was introduced by George Stout, sales promotion manager, The Perfect Circle Co., Hagerstown, Ind., who spoke on "How AAC Can Encourage Wholesalers and Repair Shops to do More and Better Planned Advertising." Mr. Stout stated that wholesalers, in many cases, are interested in going ahead with local advertising but have many questions in their minds such as how much to spend, what media to use and how to go about it. He told of meetings being conducted in various sections of the country by the National Standard Parts Association and by Motor & Equipment Wholesalers Association in which Council members are participating. These meetings are bringing to the Jobber information on how to organize an advertising program.

Advertising agencies, letter shops and printers were listed among local services capable of giving aid and advice to the Jobber on his advertising.

Mr. Stout said that the "Adver-

tising Handbook for Automotive Distributors" brought out by the Automotive Advertisers Council several years ago had proven extremely valuable to wholesalers and is doing a real job in developing interest in advertising.

Details of an "Automotive Ad-
(Continued on page 128)

South Carolina Dealers Hold Annual Meeting

The South Carolina Automobile Dealers Association held its Eighth Annual convention at Myrtle Beach on Sept. 21 and 22. W. A. McElveen of Sumter was elected President, succeeding A. H. Easterberry of Greenville.

Among the outside speakers were Lee Moran, formerly executive vice-president of NADA; Fred Rockleman, Director of Sales of Tucker Corp.; William K. Toboldt, Editor of MOTOR AGE; M. O. Anderson, President of NADA; John W. Stokes, tax consultant; Audley H. Ward, State Legion Commander; T. K. Knight of the Pilot Life Insurance Co.; George Bowie, of the Department of Public Relations of Firestone; and the Honorable Donald Russell.

The business sessions were run off particularly smoothly and a continuous program running simultaneously supplied the wives of the dealers with fashion shows and other suitable entertainment.

The topic most discussed by dealers outside of the regularly scheduled meetings was when will new car output match demand and the true sellers market return.

Unique Auto-Lite Sales Campaign for Christmas

In an unusual holiday merchandising plan, The Electric Auto-Lite Company is packaging spark plugs in Christmas stockings for sales as gifts.

The unique selling plan will be backed by a special and enlarged advertising campaign which will appear in both trade and national magazines as well as over the coast-to-coast radio program sponsored by Auto-Lite.

Special merchandising packets have been prepared to aid the distributor in the Christmas selling job. Each kit contains a two-sided two color Christmas poster to be used as a window display. Ten Christmas stockings . . . the small red ones that are so common in variety stores . . . capable of holding six to eight spark plugs, and ten gift cards to be attached to the stockings. Also enclosed will be special material to aid in building an attractive Christmas window.

The entire program is designed to help the jobber, retailer, and new car dealer and others to build profits on many gift items during the heavy Christmas buying period.

Texas to Have Big Car Track at Arlington Downs

The \$3,000,000 Arlington Downs, Texas, racing plant has been leased for the operation of large-scale automobile racing by Racing International of Dallas.

Babe Stapp of Los Angeles and Fred H. Lockwood of Dallas, partners in Racing International, an-

(Continued on page 130)

OCTOBER, 1947

a b c d

Automotive Equipment Display Held in Memphis

Mid-South auto dealers, garage men, service station operators, fleet owners, mechanics and implement dealers were treated to a preview of the new, improved automotive equipment and tools at the Automotive Equipment Display on September 17th, 18th, 19th and 20th, in Memphis, Tennessee.

More than 85 manufacturers exhibited, and direct factory representation. (Continued on page 131)

Reo Truck Announces Several 1948 Models

Designated the Models 30 and 31, two new Reo extra heavy duty truck units utilize valve-in-head engines of 513 cubic inch displacement developing 170 gross horsepower, and 602 cubic inch displacement developing 200 horsepower. These two giants of the highway are designed to haul loads ranging up to 76,000 pounds.

Exterior appearance of these two models differs from the rest of the line, with special design which tends to emphasize their bigness and ruggedness.

Each model has a full vision, 75-inch cab with a V windshield and safety glass throughout.

Side cowl ventilators supply fresh air.

The driver's seat is adjustable and upholstered in leather.

With a choice of engines, wheelbases, transmissions and axles, they are, according to Reo, "tailor made" to fit the job.

Basic Reo styling on Models C-19, C-21, C-22, C-23 and C-25 has been little changed.

Ford Not Ready to Use Valve-in-Head Engine

Despite reports that Ford engineers are working on development of a new 6 cylinder valve-in-head engine, a check with the company reveals that there is no serious consideration of such a power plant in the Ford line in the immediate future. A company's spokesman says that "an overhead-valve 6 engine is just one of many the company's engineers are experimenting with, but does not necessarily indicate that any particular type is being considered for adoption. The present L-head Ford 6 engine is being improved and stepped up in horsepower and will be used to considerable extent in the 1948 lines.

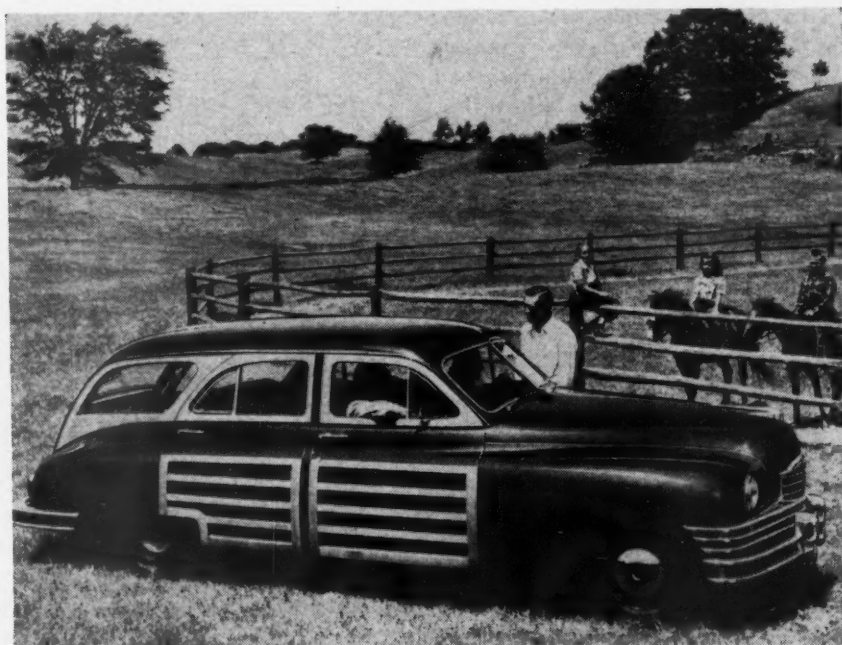
Muncie Automobile Dealer Runs for Congress

Frank Hanley, Muncie Ford dealer for 26 years is seeking election to Congress to fill the vacancy created by the death of Congressman Raymond S. Springer of Connersville. Mr. Hanley's retail automobile experience has been very extensive. He terms himself a "typical small town dealer" who has weathered all the trials and growing pains of a comparatively new business.

Mr. Hanley is past President of both the Muncie Auto Dealers' Association and the Ford Dealers' Association of Indiana. He is a staunch supporter of the State and National Dealers' Associations.

1948 Packard All-Steel Station Sedan

The Station Sedan, one of the models in the new Packard line is one of five straight eights available on a 120 inch wheelbase. Three body types are available on 127 inch and two types on 148 inch bases. The engines are respectively 130 hp, 145 hp, and 160 hp.



NEW PRODUCTS



O-1—Chicago Pneumatic Adds Valve Guide Puller

Chicago Pneumatic has now added a hydraulic valve guide puller to its line. Operated by a 12¾ lb. throttle controlled hydraulic pump, this guide puller is claimed by the manufacturer to remove frozen



valve guides in a matter of seconds. Using a slow compressive force of over 10 tons, this puller removed the guide without hammering or prying. A bridge distributes the pressure to prevent damage to the valve stems and engine block.

O-2—Weaver-Day Tire Mounting Machine Ready

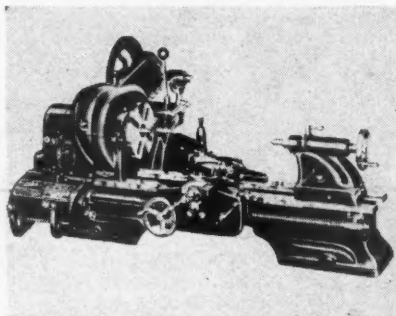
A new machine that removes and installs tires, the Weaver-Day tire mounting machine, is now in production. Mounted on a single pedestal, this unit handles tires without the use of hand tools and without pounding or scuffing. In operation, the wheel is placed on the machine after the beads are pried from the rim. An adjusting mechanism centers and secures the wheel and the attached bar is inserted under

the bead. The crank is turned and the bead slips off the rim. The tire is mounted by means of a roller that rolls the bead on to the rim. The tube is then inserted and the second bead rolled on to the rim.

O-3—Bonney Forge & Tool "Hot Item" Pad Offered

Bonney Forge & Tool Works have issued a "Hot Item Pad" for the use of jobbers. The first 8 sheets of the pad are so arranged that each salesman can keep his record of hot item sales for a week on one sheet. The hot items for the week are determined by the sales manager and written in at the weekly sales meeting. This pad is designed to be particularly helpful at the present time, when most jobbers are receiving shipments of merchandise from manufacturers who have suddenly caught up with production and are shipping out pyramided orders.

O-4—Low-Cost Atlas Lathe Now Being Manufactured

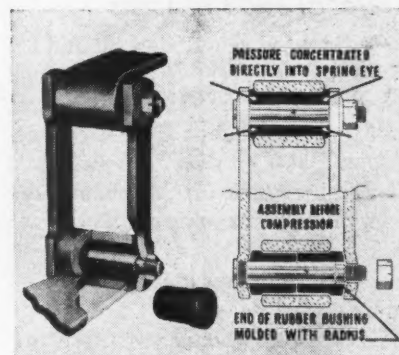


A new low-cost Atlas 10 in. lathe that provides finger-tip selection of 34 threads and feeds is now being manufactured. Forty-five threads and feeds are obtained by shifting

2 levers on the gear box and an additional 9 by changing the position of a sliding gear. A tumbler gear lever reverses the gears or disengages them from the lead screw. The "Quick-Change" feature does not limit the odd thread and feed range capacity. Other features include Timken tapered roller bearings, precision ground bed, 16 spindle speeds.

O-5—New Spring Shackle Announced by Harris

Four to six times the life of a conventional spring shackle is



claimed by the manufacturer for the new Harris "Concentrated Pressure" spring shackle. In this shackle, the degree of angle through which it can turn without slipping and the load it can carry, are determined by the relationship of coefficient of friction, area of contact between rubber and metal, and by the effective pressure applied to the rubber bushing. The rubber bushing has been molded with a radius rather than a straight shoulder, with correspondingly redesigned side plates for concentrating the compressive force directly into the spring eye.

O-6—Champion Plug Gap Tool Now at Wholesalers

A new spark plug gap setting tool incorporating a heavy ground electrode bending fixture and eight retractable wire feeler gages is now available at low cost at Champion spark plug wholesalers. The bending fixture has four slots milled to fit all sizes of regular spark plug ground electrodes. Selection of feeler gages is made by a micrometer type selector. The unit is enclosed in a rustproof, pocket size aluminum case.

O-7—Federal-Mogul Offers Crankshaft Journal Gage

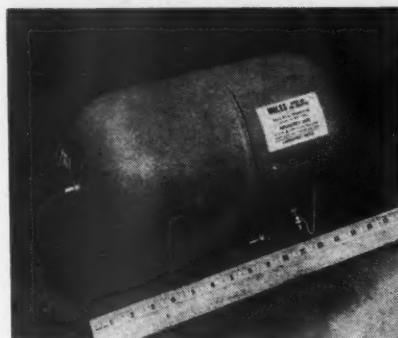
A new crankshaft gage that permits measurements of the crankshaft journals in position is now available from Federal-Mogul. The gage operates by employing the functions of two basic geometric figures, the right triangle and the circle. It is used by removing the bearing cap and placing the gage against the journal. A plunger and lockcrew device is then allowed to



snap into position against the journal surface. A micrometer is applied to the gage and the reading doubled. This gives the actual journal size. Taper can be checked by applying the gage at both ends of the journal, and out-of-roundness can be detected by rotating the shaft and taking a series of readings. The gage is available in three sizes, for journal diameters of 1.970-2.550, 2.470-3.250, 3.220-4.125 inches.

O-8—Emergency Air Tank For Passenger Car Trunks

A small, high-pressure air-storage tank that fits inside the trunk of a passenger car is now being marketed by Wales Metal Products



Company. This emergency tank, which measures 1 ft. in length and 7 in. in diameter, can be inflated at the service station like an ordinary tire and provides sufficient pressure to inflate tires by means of an attached hose. The unit weighs 4 lbs. and has a 15 ft. hose, a chuck, valve and built-in pressure gage. It is safety-tested to 400 lbs. pressure.

O-9—Black Arrow Fibr-Gun Being Shipped to Dealers

The Black Manufacturing Company is now shipping to its dealers a newly developed flock gun. This addition to the Black Arrow line of

"Hollow Air" paint spray equipment will be known as the "Fibr-Gun." It can be used for the application of all kinds and types of flock, from the finest grade up to more than 3/16 in. long fibres.

O-10—Electrical Hydrometer

A new type of battery tester has been announced by Thomas A. Edison, Inc., to be known as the Edison Electrical Hydrometer. This instrument, designed to be used in place of the conventional hydrometer, is claimed to speed up percent-of-charge testing on car batteries. Although similar in general appearance to the conventional voltmeter, the dial gives a direct reading of the percent of charge, thus



eliminating specific gravity readings, temperature corrections and removal of vent plugs.

WHERE Can I Get It?... HOW Much Will It Cost?...

You'll want more information on some of these products. Bill Toboldt, editor of MOTOR AGE, will see to it that you get the whole story, absolutely without charge, if you will jot down the code numbers of the products that interest you on the coupon below (don't forget your name and address) and send it to him. Use this same coupon if there is any other product or manufacturer about which you want information.

Bill Toboldt, Editor
MOTOR AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.

Code Number of New Products.....

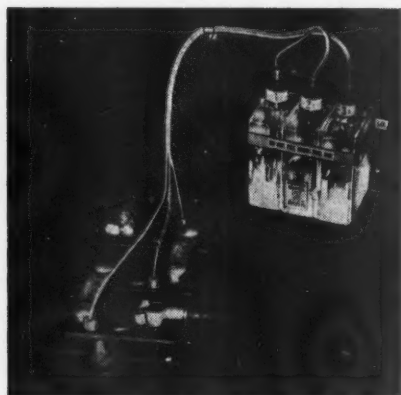
Your NameYour Title

Your Company

Address
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O-11—Aqualator Battery Water Feed Unit Available

Designed to maintain car batteries at even water level without attention on the part of the driver, the Aqualator consists of containers

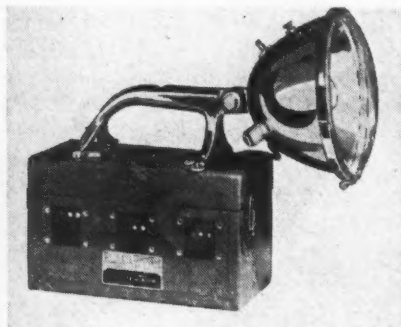


under the hood to feed water to the battery plates automatically. Already an approved Hudson accessory, the Aqualator operates by thermo-expansion, actuated by engine heat and can be installed in any position, above or below battery level.

O-12—U-C Lite Hand Lamp

A rechargeable hand lamp that indicates, upon inspection, how much charge remains in its batteries, has been introduced by the U-C Lite Company.

The lamp is said to throw a 2500 ft. beam. It has chromium finished head and handle, and three transparent windows, one for each cell. In each window are three specific gravity ball indicators, one green, one white and one red. When the green ball is down the battery is

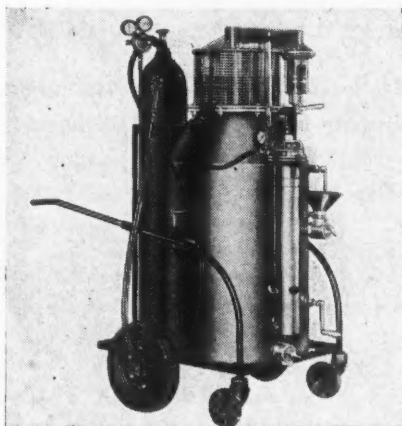


5 per cent discharged; when the white ball is down the battery is 50 per cent discharged; when the red ball is down the battery is 95 per cent discharged. When the

battery is full charged, all balls in all cells rise to the water level line. In this way, the user can tell immediately, without using a hydrometer, when the battery needs recharging. The battery is spill-proof and the lamp head is fitted with a receptacle for the charger plug-in to eliminate removing the battery for charging. Accessories include hold-down bracket; carrying strap; resistance switch; wire guard, red, green, blue and flood-light snap-on lenses; charger and 15 ft. extension cord complete with 6-volt, 25-watt bulb and adapter.

O-13—Sight Feed Portable Acetylene Generator

The Sight Feed Generator Company has introduced a new portable acetylene generator called the "Oil Field Special," which can be mounted on truck or trailer for transportation to the work. The carbide supply is fully visible through a "Sight Feed" Pyrex hopper.



Using $\frac{1}{4} \times \frac{1}{2}$ in. carbide, this generator employs gravity feed, diaphragm control and automatic pulsation.

O-14—Shepard-Thomason Brake Shoe Grinder Offered

Shepard-Thomason have added to their line a brake shoe grinder on which the micrometer is interlocked with the grinder itself, after the drum has been measured, thus transferring the exact size to the grinder. This grinder will handle passenger car and average truck work, plus large cast truck shoes and will accommodate shoes up to

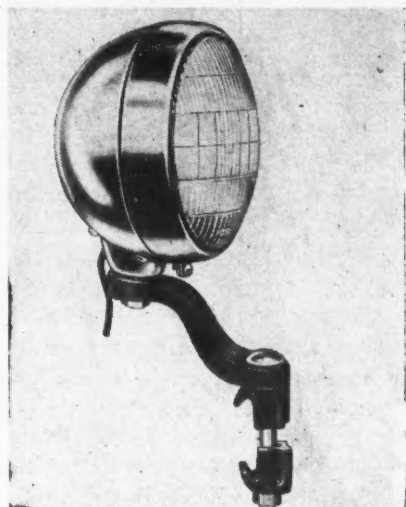
8 in. wide and 19 in. diameter. The micrometer for measuring drums is furnished with the grinder. In operation, it is possible to grind the shoe to drum diameter by micrometer measurement; to check the ground shoe before it is removed from the grinder; and to



check the unlined shoe for over- or undersize and deformity so that correction can be made before the shoe is lined.

O-15—Arrow Fog Light

Arrow is now manufacturing a new fog light which incorporates a stainless steel rim which is butt-welded in four places for extra strength. According to the makers, this stainless steel rim will resist wear at the spot where the greatest



abuse is received for dirt, pebbles, tar and other material thrown up from the road.

Lower and wider !

*Studebaker's postwar cars
have a distinction
all their own*

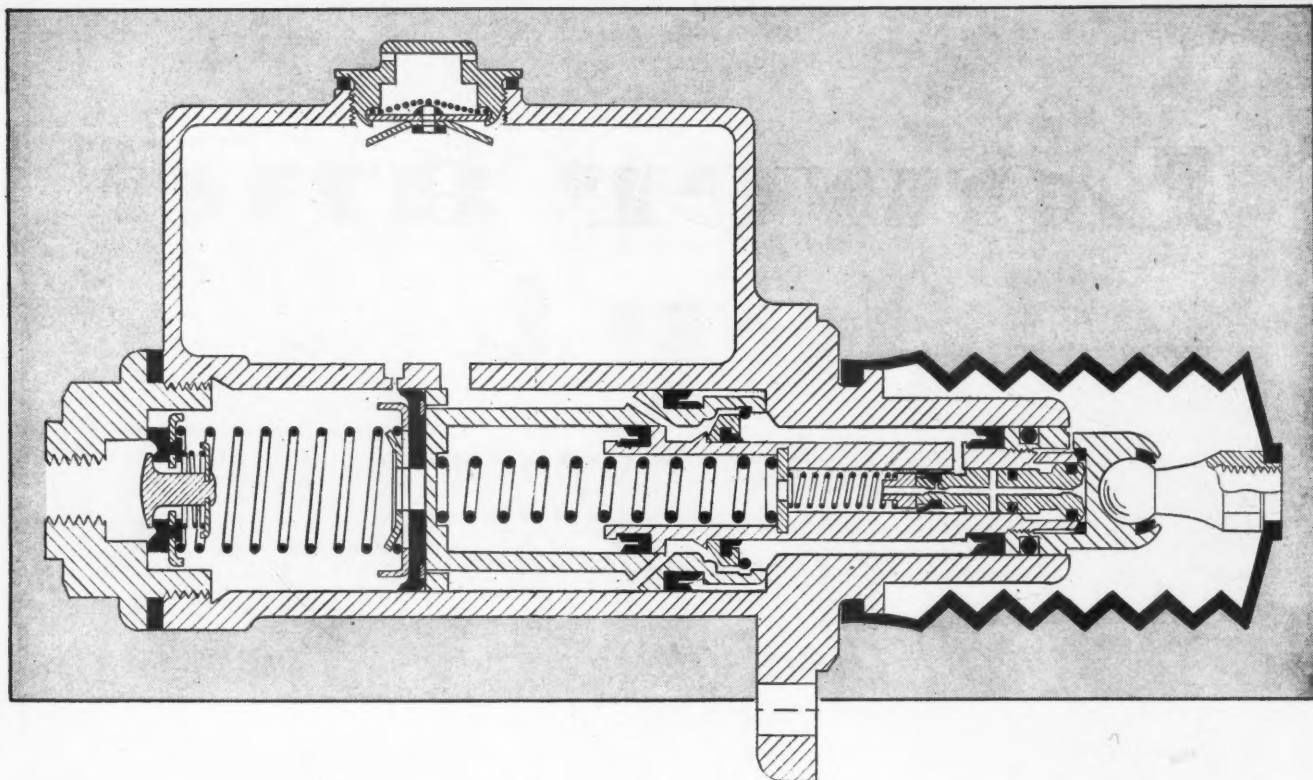
Lower and wider !

*That's the style trend
from now on for
all truly modern cars*

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POSTWAR LEADER IN MOTOR CAR STYLE

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Servicing the Hycon Compound Master Cylinder

**A description of the salient features of the Hycon
replacement cylinder as used in trucks and buses**

THE Hycon Compound Master Cylinder, a product of the New York Air Brake Company, was designed as a replacement unit for standard, factory-installed master cylinders. Incorporating two pistons instead of one, and two stages of pressure, it reduces the amount of pedal pressure necessary for adequate braking at rated loads and increases the available power for overload. There are two sizes, for application on trucks and buses up to 2½ ton rating, now using conventional cylinders of 1¼ and 1½ in. diameter.

The Hycon cylinder's two pistons work in the following way: The large (or primary) pistons expands the brake shoes into contact with the brake drums.

The smaller (or secondary) piston then boosts the pressure between the brake lining and the brake drum. These two pistons are coupled by means of a hydraulic valve which restrains the effect of the smaller piston until a definite hydraulic pressure has been attained. This valve has a metering action to smooth the transition from low to high pressure.

The large cylinder builds up a pressure of about 200 lbs per sq. in., while the small cylinder increases the pressure to as high as 2,000 lbs per sq. in. According to

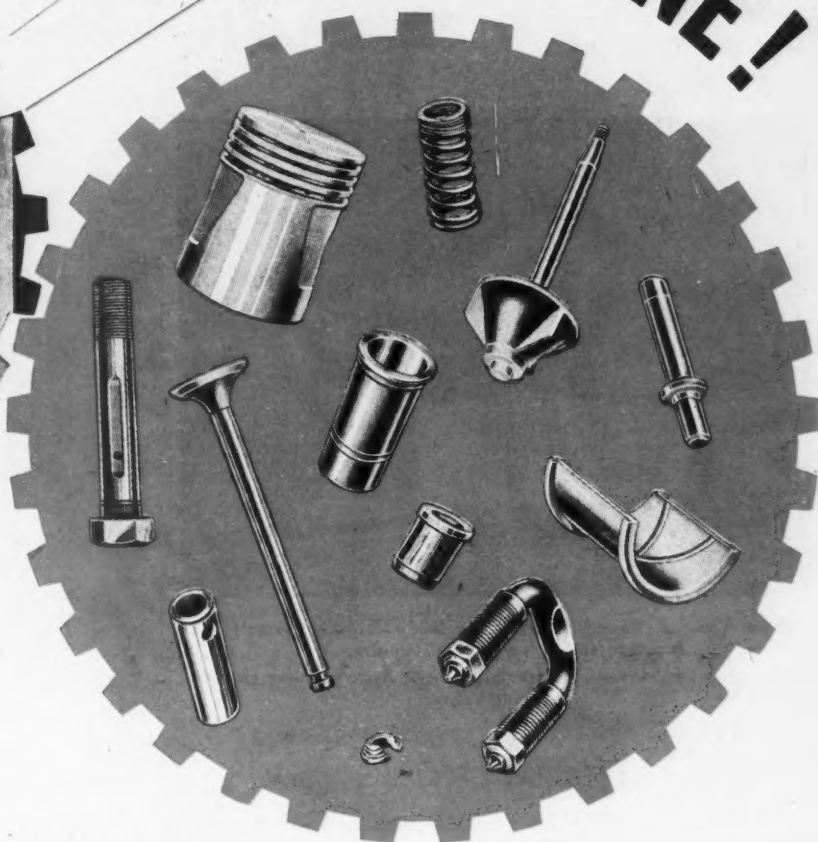
specifications, the Hycon Cylinder develops 8½ pounds of hydraulic pressure for each pound of pedal pressure, as compared with 5 pounds of hydraulic pressure with conventional 1¼ in. master cylinders. It is designed to be completely interchangeable with standard, single-piston units.

The manufacturer recommends that before installing a Hycon cylinder, the mechanic makes sure that the brakes are properly adjusted while the original cylinder is still in position.

When installed, the Hycon must be mounted horizontally and must line up with the master cylinder plunger or rod if it is to perform properly. The link-

(Continued on page 83)

THERE'S MORE PROFIT IN THE KING LINE!



The King Line includes Pistons, Pins, Motor Bearings, Valves, Cylinder Sleeves, Water Pumps and Parts, Front End Parts and Shackles...all in one catalog from one jobber. That's real service!

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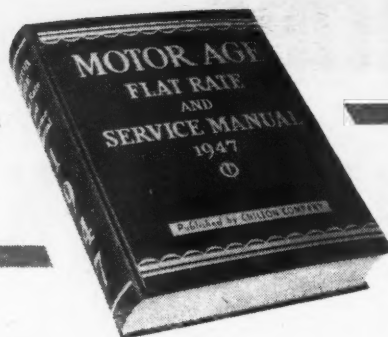
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BOLTS • BUSHINGS • SILENT-U SHACKLES



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MOTOR AGE FLAT RATE AND

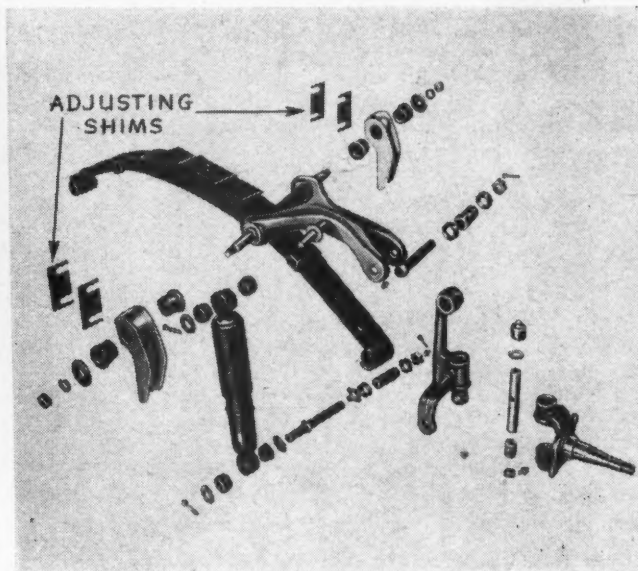


SERVICE MANUAL DEPARTMENT



Above: View of tie-rods taken from below looking towards the radiator, shows toe-in adjusting sleeves.

Right: Exploded view of the front suspension system, shows camber adjusting shims.



Front End Alignment on the Willys Station Wagon

**Directions for adjustment of the planar
type suspension...by S. B. R. Taylor**

FRONT wheel alignment on the Jeep Station Wagon presents no difficult problems. However, the necessity of having the vehicle at curb weight while making the adjustments must be emphasized. Curb weight is defined as the weight of the standard vehicle without driver but including water, oil, spare tire, and regular tool equipment. The front suspension is of the transverse spring and parallel arm type,

which means that the toe-in changes with the load, this in turn changes the other factors so that if the car were checked at any other than curb weight the results would not be correct. Front suspension specifications at curb weight are as follows:

Camber.....1 Deg.
Caster.....1 Deg.
Toe-in..... $\frac{1}{8}$ in.
King pin incl....5 Deg.

Caster on this type of suspension is not adjustable so if measurement shows a variation of more than $\frac{1}{2}$ Deg. from the 1 Deg. figure the parts are worn or damaged and must be replaced.

Camber is adjusted by adding or removing shims from between the front suspension knuckle arm pivot bracket and the frame. With the vehicle level and the

(Continued on page 118)

3 Ways for PROFIT

with

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Equipment



TRUCUT Armature Lathe with electric drill and NEW DRILL HOLDER ATTACHMENT, as a power unit in place of motor.

- When you buy a TRUCUT Armature Lathe you have three sure ways of making real profits. With the TRUCUT you can machine commutators, undercut the mica insulation, and with our NEW PISTON REGROOVING ATTACHMENT, you can now enlarge piston grooves for over-size piston rings.

You can equip your TRUCUT Lathe to operate with your own electric drill, by using the DRILL HOLDER ATTACHMENT shown in the illustration.

The TRUCUT Armature Lathe is in daily service in thousands of garages and shops that feature precision workmanship, and recognize the profit possibilities of this speedy precision tool.

TRUCUT Armature Tester



A real armature tester finished in beautiful red. An excellent meter type armature tester or growler for automotive repair shops. Equipped with pair of Test Prods connected in a test light circuit to test for grounds. Complete with meter and meter prods (double prod) to indicate open or short circuits. 115 Volt 60 Cycle Alternation Current, Shipping Weight 13 lbs., Dimensions 13" x 5 1/4" x 9 1/4" high, 0 to 30 Ampere Meter, Lamp not furnished.

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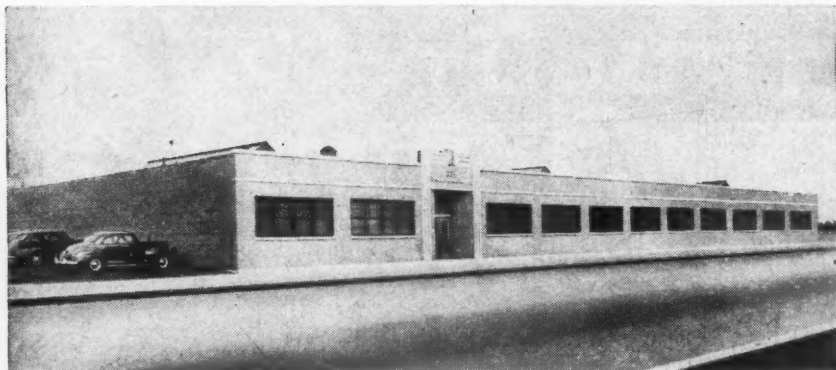
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Ask your jobber or write for information
on this NEW EQUIPMENT.

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FILKO Completes New Building



John Filko, president of the F. & B. Co., Chicago, announces the completion of a new building at 4248 W. Chicago Avenue. This is the third time this company has expanded since it was formed in 1923

to manufacture Ford Model T ignition points.

The company which now manufactures a complete line of ignition parts, including coils, breaker points, distributor caps, rotors,

condensers, starter switches, etc., will now have 32,000 sq. ft. of space. This represents more than 10 times the space it originally occupied and the history of the company's growth is most dramatic. Founded by John Filko in 1923 its growth has been meteoric. Originally a native of Austria, Mr. Filko fought with the French Foreign Legion in the First World War. Shortly after returning to this country, he borrowed \$350 to buy equipment to manufacture Ford Model T ignition points. Mr. Filko studied mechanical engineering in Vienna and has designed, not only the ignition parts, but also the machine tools and dies to manufacture those parts. The original dies used in the production of the Ford Model T ignition points, he designed personally.

John Filko's history and his success is another striking example of the possibilities and opportunities which abound under the American system of enterprise.

Illinois Champion Truck Drivers Named at Rodeo

In one of the closest truck rodeo contests in history, John R. Winter of the Dohrn Transfer Company of Rock Island, won the tractor-trailer event at the Illinois State Rodeo at Springfield last week-end. Only one-half a point separated the scores of the first three drivers in this event. The entire rodeo finals were held in a driving rainstorm. In second place was Bernhard Hackler, Scherer Freight Lines, Ottawa, Ill., and third was Kenneth L. Wood, Aurora Motor Express, Aurora, Ill.

In the straight truck class at Illinois, the new champion is Norbert Totzke, Chicago, of the George F. Alger Company. Totzke had a sparkling 389.4 to lead second place Ellehan Nussman of the Decatur Cartage Company of Chicago by 18 points. Nussman's score was 371.4. Third place went to James McQuality of the Prairie State Motor Freight Company of Springfield.

Nussman's feat in running second was particularly praiseworthy because he had intended to drive in

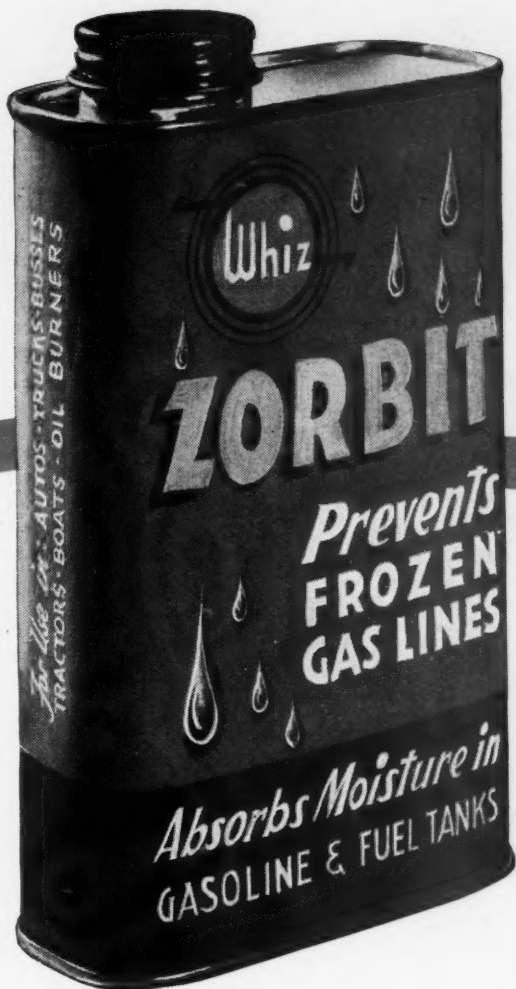
(Continued on page 138)



"He's just a fall guy—summer in his heart, spring in his step, and winter in his arteries!"

A NEW OPPORTUNITY

FOR YOU TO PROFIT THIS FALL and WINTER!



*Ask your jobber about the
Whiz Zorbit Special
Introductory Offer*

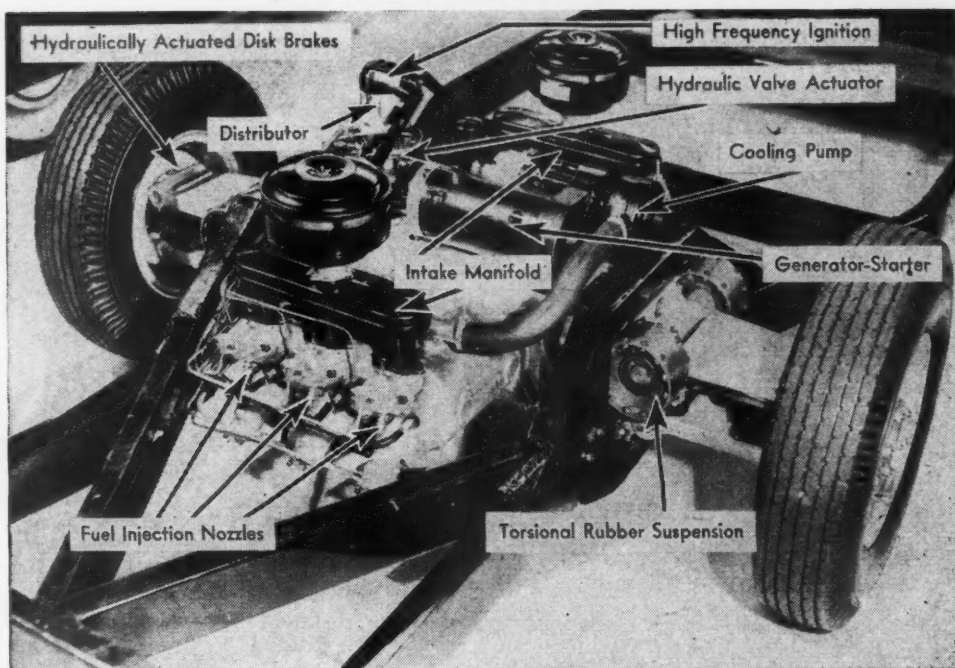


WHEREVER the temperature drops to freezing, you'll find a ready-made market for ZORBIT! This new WHIZ development solves an old problem—prevents freezing of gas lines. It stops the trouble by absorbing the moisture and water in gas tank and fuel lines. ZORBIT protects fuel line and carburetor from freezing, rusting, and clogging gum deposits . . . helps eliminate fouling of plugs.

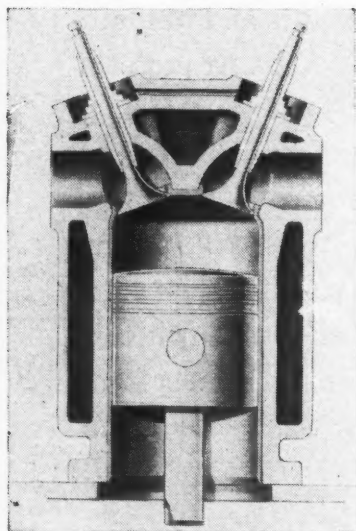
Here's your market . . . everyone in your territory who owns a car, truck, tractor, bus, boat, or oil burner. Cash in on this ready-made market—order ZORBIT from your jobber now! R. M. Hollingshead Corp. General Offices: Camden, N. J. Canadian Offices: Toronto, Canada. Warehouses: Dallas, San Francisco, Chicago.

A PRODUCT OF
Hollingshead
LEADER IN MAINTENANCE CHEMICALS

Close-up of the horizontally opposed 6-cylinder engine. The Tucker engine is a 5 in. bore by 5 in. stroke 589 cu. in. power plant. Drive is from both ends of the crankshaft to the wheels through a hydraulic coupling and two universal joints at each wheel. Also shown are the fuel injector nozzles. The engine has no camshaft since the valves are operated hydraulically from the valve actuator shown. The rear wheels are independently suspended through torsional rubber mountings.

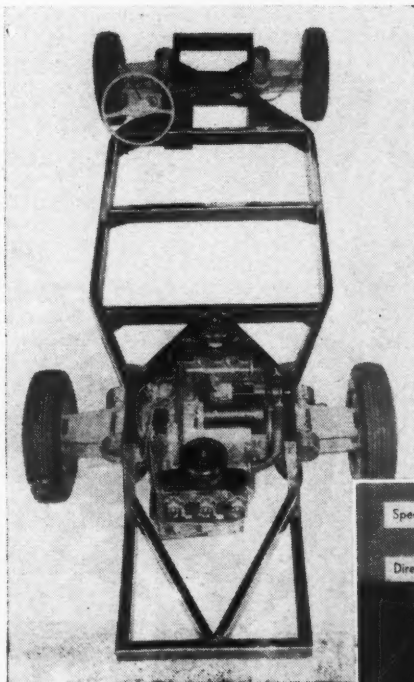


TUCKER INNOVATIONS

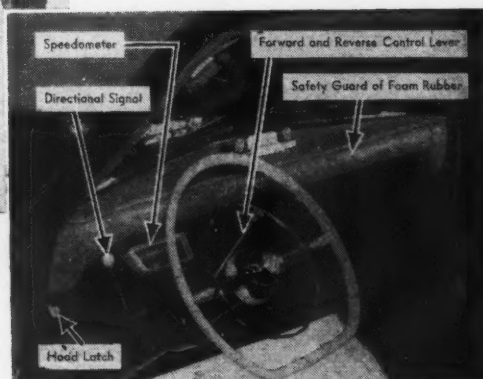


Above. Sectional view of the Tucker engine cylinder showing the mounting of the valves, which are operated hydraulically, and the cylinder liner. There are two banks of three cylinders made of aluminum alloy with liners. Cylinder head is cast integral with the block. The liner is sprayed with an aluminum bronze alloy and diamond bored.

Right. The crash panel which replaces the conventional instrument board is made of foam rubber and considered a real safety factor. The speedometer is built into the steering column support.



(Left). This view shows the general construction of the Tucker chassis with rear-mounted engine. The frame, which consists mostly of two by five in. channels, incorporates five cross members and four torsional members, two of which are located just ahead of the engine. General data on the car have been announced as follows: Wheelbase—128 in.; overall length—214 in.; front tread—62 in.; rear tread—65 in.; maximum car width—76 in.; weight (empty)—nearly 3000 lb.



Snap-on

Armature

Reconditioning Tool

does both

1

**TURNS DOWN
ARMATURE**

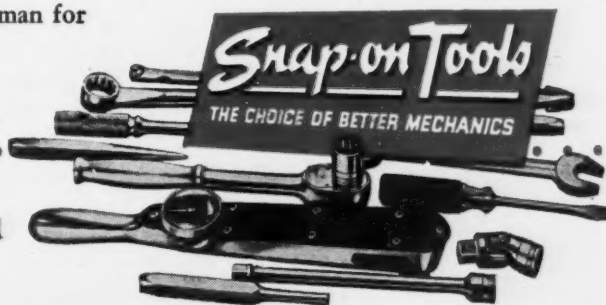
2

**UNDERCUTS
THE MICA**



From start to finish, Snap-on Armature Reconditioning Tools are engineered to do an accurate turning and undercutting job. This unit requires no motor . . . no special centerless chuck. Simply lock it in a vise, insert armature shaft, and it's set to do an exact job, quickly, and with important savings in time and in capital investment, because it's faster to use than an ordinary lathe. The depth of the cut can be controlled to the finest shaving . . . the downward lead is fully automatic.

Undercutting the mica is just as simple . . . and when you finish the job by touching up the commutator with fine sand paper, the operation is completed to the entire satisfaction of even the most critical. Ask the Snap-on man for full details.



SNAP-ON TOOLS CORPORATION

8036-J 28th AVENUE

KENOSHA, WISCONSIN

International Division: Kenosha, Wisconsin, U. S. A.

OCTOBER, 1947

When writing to advertisers please mention Motor Age

71

in the back of the rear seat. The large baggage compartment is separate from the spare tire and tool space.

Most interesting feature of the interior is the attention given to the position of the driver. Not only is the seat adjustable, but the arm rests (one on each side of the driver) are adjustable, and the

steering wheel is of the telescopic type that may be instantly altered for height.

The Sheerline, rather less luxurious than the Princess, has severer lines and simpler interior appointments, although, like the Princess, everything indicates a high order of workmanship and finish. Again, two radio speakers are used and

built-in heating and ventilation is standard. Luggage to match the car is available.

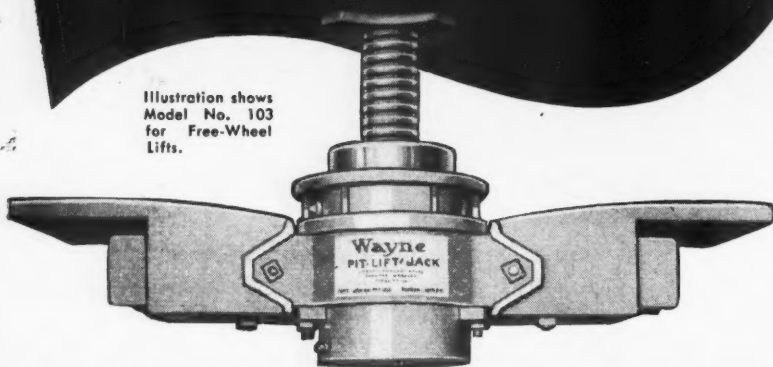
The smaller cars, the 4-door Devon and the 2-door Dorset, are distinctly utility cars, priced at about \$1495 and \$1395, respectively, although smart in appearance and obviously well engineered. The 92½ in. wheelbase chassis is the same for both cars, as is the four-cylinder, overhead valve engine. Developing 40 hp, this engine has a three-bearing crankshaft and three-ring pistons. Lubrication is by pressure. A Zenith carburetor and AC fuel pump constitute the fuel system, while the electrical units are operated from a 12-volt battery.

The brakes are Girling two-leading-shoe hydraulics on the front wheels and Girling mechanicals on the rear. The front end is of the independent type with coil springs and double-piston shocks as on the larger cars. Stevenson jacks are built into the chassis side members and are raised from inside the car with the wheel lug wrench.

The bodies, although smaller than standard, are adequate for seating five passengers, the front seats being of the separate or bucket type so popular overseas. They are upholstered in leather. The Devon has a sliding panel in the top, over the front seats. Radios and heaters are available at extra cost.

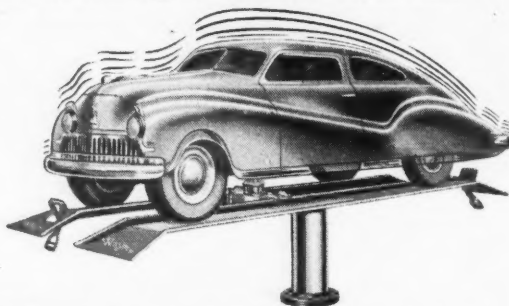
A Sales Builder INCREASES PROFITS • BUILDS GOODWILL

Illustration shows
Model No. 103
for Free-Wheel
Lifts.



THE WAYNE PIT LIFT JACK

IMPROVES lubrication service on all types of lifts or pits. Designed for lifting and oscillating car bodies. Saves time and money in tire and wheel service. Made in four types to fit hoists or pits of any design. Write today for bulletin.



When equipped with the Wayne Oscillating Valve, the Pit Lift Jack automatically oscillates car on lift or pit, assuring better penetration of lubricant, making it easy to discover squeaks or broken parts.

for your protection

**THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA**

PUMPS • COMPRESSORS • AIR SCALES • HOSE REELS • CAR WASHERS • LIFTS



"That's right. Always thinking of yourself."



Cook Cleland, World War II Navy Ace, and the Thompson Trophy which he won in the 13th Thompson Trophy Race for piston engine planes.

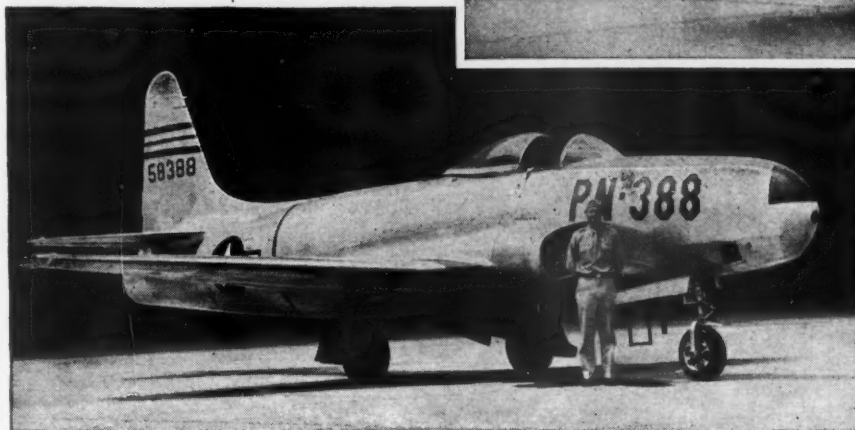


1947
Thompson Trophy
WINNERS
★
NATIONAL AIR RACES
CLEVELAND, OHIO
SEPTEMBER 1ST



The checkered Flag—signal of victory and a new world speed record for closed-course flying in the 1947 Thompson Trophy Race.

Cleland's "Corsair", a stripped-down Navy fighter, set a new world's closed-course speed record for piston engine planes. The 3500 h.p. 28-cylinder Pratt & Whitney "Wasp Major" engine whipped the plane around the 15-mile course twenty times at an average speed of 396.13 m.p.h. Cleland's share of the \$42,000.00 prize purse was \$19,500.00. Photo shows ground crew.



This Army Air Force P-80 fighter was winner of the Thompson Trophy Race for jet-powered planes. Piloted by Lieut. Com. Robert L. Petit, it averaged 500.70 m.p.h. on its eight laps of a 22.5-mile course. It was equipped with an Allison J-33 turbo-jet engine. Since the war the Thompson Trophy Race has been flown in two divisions, one for piston engine and the other for jet-powered planes. Duplicate Thompson Trophies went to both winners.

SINCE 1930, EACH THOMPSON TROPHY RACE, demanding the utmost "pylon polishing" skill over a closed course, has provided aviation's most gruelling test of speed combined with maneuverability. Beyond the thrills and chills of this spectacular climaxing event of the world's greatest air show is a serious purpose—to encourage the development of faster, safer planes that will hold America's commercial and military leadership in the air.

Thompson  Products, Inc.

CLEVELAND • DETROIT • LOS ANGELES • ST. CATHARINES, CANADA

Precision Parts for Automobiles and Airplanes; Manufacturers of the famous Thompson Sodium-Cooled Aircraft and Automotive Valves; Builders of Vanes, Blades and Assemblies for Jet Propulsion Engines.

faces is available, meeting most requirements. Space is sold by the inch and full page ads are possible.

Display ads are placed as close as possible to your regular listing in the classified section and a note appears under your one-line listing, calling attention to your display ad.

Proper copy for a display ad is as much an art as composing any newspaper insertion, mailing piece

or billboard. If you have an advertising agency, let it prepare this copy. If you don't, take your problem up with the phone company or the salesman soliciting your appearance in the classified section.

Once you've picked the type of ad you want, your first problem will be under what heading you should list it.

Your local phone book may al-

ready have a section headed "Auto Repairing and Service," or "Auto Parts." There is no hard and fast rule on headings. Where there are a few headings, many shops have a single line entry under each with an informational or display ad under the heading that they think is the most logical place for their prospects or customers to look.

That takes care of the servicing and repair parts, but how about auto accessories and supplies. Your phone book may have separate headings for batteries, brake linings, seats, spark plugs, radios, and so on. If you sell any of these, some listing should be inserted under these headings.

A study of the territory served by the operator and by the local phone directories will be the next consideration. If your store or shop is in Newtown, but you also sell in East Newtown and West Newtown, which are in turn served by other books, ads should appear in all three books. Don't overlook the possibilities of out-lying districts served by another phone book but actually suburbs of your own town. Investigate each phone exchange in the area you cover or would like to cover. If you aren't listed when a prospect is looking for accessories or equipment, nine times out of ten, he isn't going to ask information.

For all phone book copy, here are some things to look for. Is your name, address and phone number shown correctly? Is your line of products identified so that the average reader could find it? Does the

(Continued on page 76)

1-2 Punch FOR FALL PROFITS!

1. CLEAN 'EM WITH KI-MO

Quickly removes rust, scale, dirt and sediment! Contains no acid or caustic. Requires no neutralizer. Leaves cooling system clean as a whistle—ready for anti-freeze!

2. PROTECT 'EM WITH RUSGO

A perfect reconditioner for old anti-freeze of any type! Prevents formation of rust in the cooling system—insures clean, acid-free coolant all winter long!



Other famous Serco products

SERCO NOXO SOLVO REESO
SHAMO LUBRO D-GRESO



Service Supply Co.

1115 SEVENTH ST. • DENVER 4, COLO.





New Exide MERCHANDISER

with "KEEPACHARGE"

An improved design of a successful selling aid that has brought extra profits to more than 22,000 Exide Dealers. It will make extra profits for you.

The New Exide Merchandiser sells batteries

for you quickly and easily by demonstrating values.

It's equipped with the "KEEPACHARGE," an Exide designed trickle charger which keeps 9 stock batteries fully charged, ready for immediate sale.

Get ready NOW for the coming battery season.

ORDER FROM YOUR EXIDE WHOLESALER

More than ever before, it's good to be an Exide Dealer

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

OCTOBER, 1947

When writing to advertisers please mention Motor Age

75

ad tell all the items you sell or the services you render? Does the copy sell your services, accessories or equipment in general?

Your phone company or its agent handling classified book advertising, can answer all questions about what type faces to use, layout, copy preparation and such details, but they generally do not

know the auto business or your own particular operations. That part is up to you. Phone book ads should be planned as carefully as a newspaper advertisement or a mailing piece. The phone book may be the first contact a prospect, especially a newcomer in your area, has with your business. Make it a lasting impression.

Ford Shipping Parts East by Air Express

Although shipment of critical parts and materials by plane is not a new practice in the automotive industry, Ford Motor Co. still is heavily involved in air express shipments. Through an arrangement with a small air line, operated by ex-GI's, the company is now shipping quantities of scarce parts and materials from Dearborn to the East Coast, principally to the Edgewater and Chester plants. At least one shipment is made every night and on some nights two transports make the run carrying everything from gas tanks to hoods and glass. The planes are converted army surplus C-47's which carry up to 6000 lb. cargo each. On the return trip the air line carries clothing and shoes for Detroit retail outlets.

Nieman with Precision

Precision Automotive Components Company of St. Louis, is now manufacturing the Pacco line of precision made carburetor parts for popular makes of carburetors.

Pacco parts are manufactured under the direct supervision of Nieman, who was for 26 years Plant Superintendent of Carter Carburetor, assuring quality in workmanship of these parts.

Hard to manufacture and get items are fast being put into the Pacco line. The most recently added items to the Pacco line are the Economizer Valve Assembly, Throttle Shaft Loose Lever, and Piston Pump Assembly. These are being added as part of the Pacco program designed to round out a complete line of carburetor replacement parts.



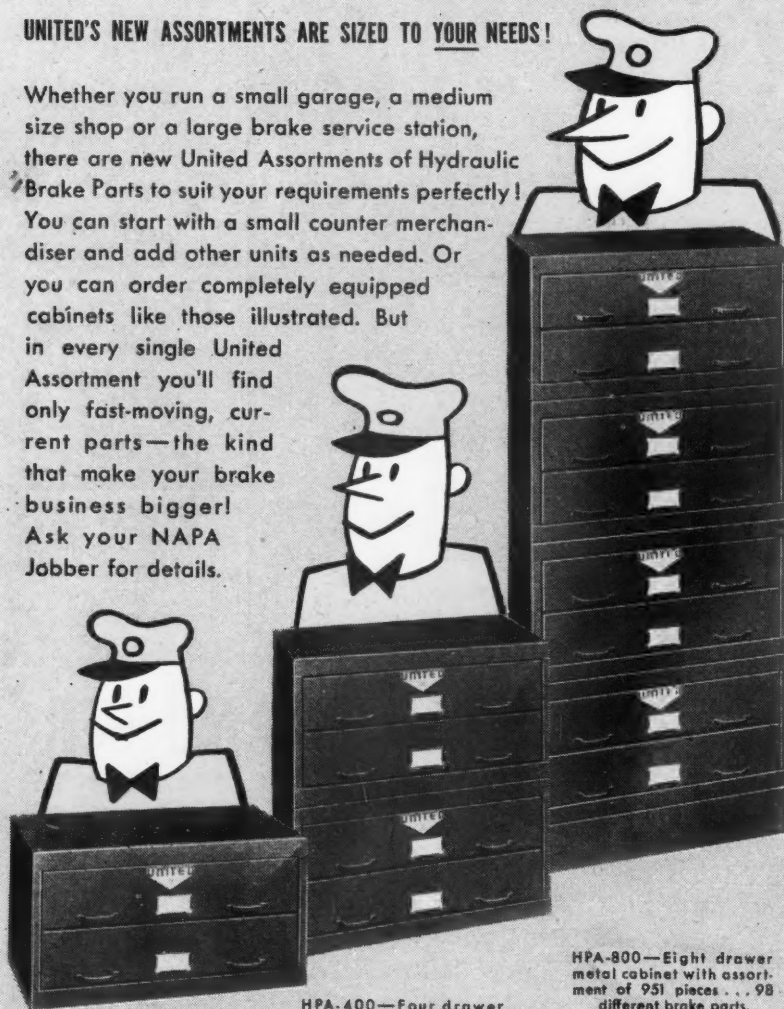
"Gee, I'd like to try a whole letter today!"

How Big Is Your Brake Business?

UNITED'S NEW ASSORTMENTS ARE SIZED TO YOUR NEEDS!

Whether you run a small garage, a medium size shop or a large brake service station, there are new United Assortments of Hydraulic Brake Parts to suit your requirements perfectly!

You can start with a small counter merchandiser and add other units as needed. Or you can order completely equipped cabinets like those illustrated. But in every single United Assortment you'll find only fast-moving, current parts—the kind that make your brake business bigger! Ask your NAPA Jobber for details.



HPA-200—Two drawer metal cabinet stocked with 286 pieces... 42 different brake parts.

HPA-400—Four drawer metal cabinet containing 540 pieces... 90 different hydraulic brake parts.

HPA-800—Eight drawer metal cabinet with assortment of 951 pieces... 98 different brake parts.

UNITED

UNITED PARTS MFG. CO.

1250 W. VAN BUREN STREET, CHICAGO 7
HYDRAULIC BRAKE PARTS BRAKE CABLES
SPEEDOMETER CABLES FUEL PUMP PARTS

**Your #1 Year 'round
PROFIT MAKER**



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EXTERIOR WINDSHIELD SHADE • A DIETERICH PRODUCT

#1

**ASK YOUR
AUTOMOTIVE WHOLESALER
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_____ We want to know about the #1 Proposition _____

Name _____

Firm _____

Address _____

City _____ State _____

Mail to DIETERICH PRODUCTS CORPORATION, 1125 W. Lake Street, Oak Park, Illinois

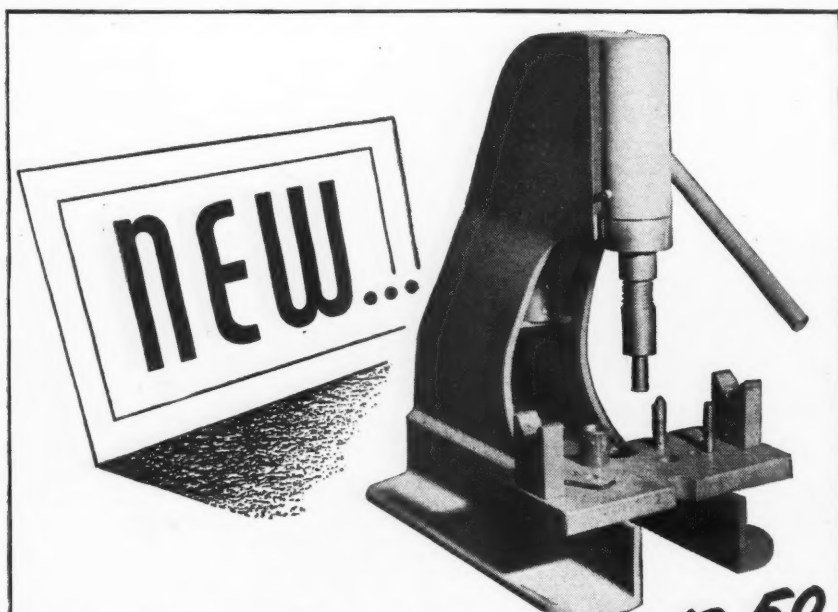
Snow Shovelling (Continued from page 41)

walk clear, thus eliminating use of snow shovels and chemicals.

Because of the somewhat unusual requirements of a repair shop, radiant heating has been accepted widely for this class of structure. Keeping floors uniformly comfortable, eliminating drafts and concealing all heating devices so a maximum amount of space may be

utilized, are described as the principal features of such systems by garage operators. In addition, fuel economies realized by the use of radiant heating are said to be impressive. Another advantage reported for garages is the speed with which slush, tracked in by autos during the winter, melts and evaporates from the warm floor.

Radiant heating differs mechanically from conventional forced hot water heating only in the size of the heating element. Instead of using small, high temperature heating devices and relying upon air currents to distribute warmth, a radiant system operates as a huge, low temperature element—coils are embedded in the floor in most, installations—to regulate radiation heat losses of the body. Thus it is possible in a radiant heated building to be comfortable at air temperatures lower than those normally required for conventional systems.



10-Ton Portable **ARBOR PRESS** \$127.⁵⁰ F. O. B. FACTORY

For the first time, a 10-ton portable arbor press, and at a low price every shop can afford.

It's a RUGER

Can be used anywhere in the shop, set up on table or workbench convenient to the job. Easily picked up and moved around by one man as press weighs only 101 lbs.

Simple and practical . . . hydraulic principle eliminates all mechanical complications. Only two controls, pump lever and release valve. Hydraulic ram stroke, 6 3/4",

with an additional 6" up-and-down mechanical adjustment, gives ample working range. Safety release prevents overload. Price includes table, V-blocks and all attachments shown in illustration.

Mail your order to either office listed below. Shipment will be made through our nearest distributor. Or write for free photo bulletin and complete specifications.

RUGER Equipment Co., Inc.



408 Leader Bldg. P.O. Box 3821
Cleveland 14, Ohio Portland 8, Ore.

Dodge Facilities For West Coast Assembly

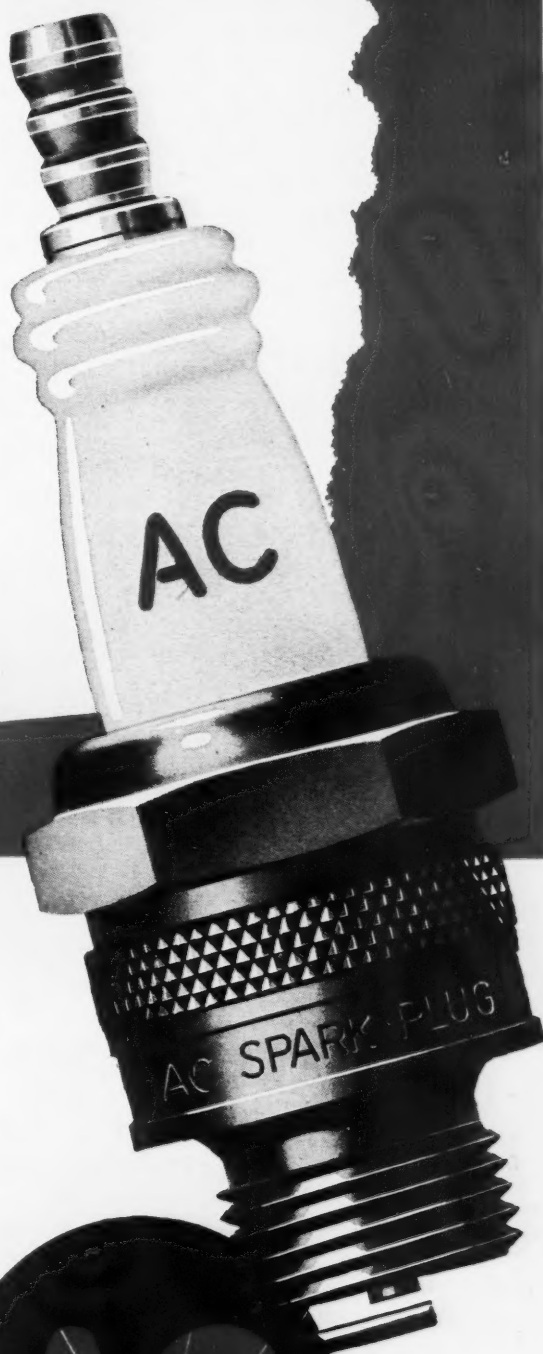
Dodge Division of Chrysler Corporation currently is expanding its manufacturing activities on the west coast. L. L. Colbert, president, reports that an addition is being made to one of the corporation's plants in San Leandro, Cal., to provide increased assembly facilities for Dodge cars and trucks. When completed, the new facilities will allow assembly of approximately 150 passenger cars and 80 trucks per eight-hour shift. Currently Dodge cars and trucks are being assembled in the Plymouth assembly plant at Los Angeles. The new Dodge assembly unit will comprise 292,000 sq. ft. of space.



"It's the next window you want."

CHECK THE HEAT RANGE OF ALL PLUGS

When Rinsing Air Cleaners



Here *is* an opportunity! Better gas, longer mileages, and normal driving speeds call for a "cooler" type of improved AC Spark Plugs. Plugs of a Heat Range that did a job in the days of lower octane gas and slower driving are too "hot" today. They are likely to split, blister, misfire, and cause preignition.

There are millions of these "wrong Heat Range" plugs still in use. Plenty are in your neighborhood. **GET 'EM OUT!** *You'll sell new plugs!*

Check the Heat Range of *all* plugs on every car, truck, bus, and tractor that comes in for *any* kind of service. Check it against the AC Specification Chart—and *be sure*.

**ALWAYS
CHECK
HEAT
RANGE**

- ★ When RINSING AIR CLEANERS
- ★ When CLEANING FUEL SYSTEMS
- ★ When CRISS-CROSSING TIRES
- ★ On every BRAKE JOB
- ★ When CHANGING FAN BELTS
- ★ When you give a WASH
- ★ When you CHANGE OIL
- ★ When you LUBRICATE
- ★ When you SERVICE A BATTERY
- ★ When you TUNE UP and REPAIR
- ★ When CHECKING ANTI-FREEZE
- ★ When CHECKING OIL
- ★ When CHANGING OIL FILTERS

AC SPARK PLUGS

AC SPARK PLUG DIVISION — GENERAL MOTORS CORPORATION

Porter-Ferguson Clinic

Starting September fifteenth, and showing simultaneously internationally, an elaborately staged and equipped demonstration was launched by H. K. Porter, Inc., maker of Porter-Ferguson Hydro-Method. It features the autobody repair business. The high spot of the demonstration is a talking motion picture film in full color, with narration by Lowell Thomas, showing for the first time actual repair

operation, from wreck to complete restoration. The film is being made in a model shop setting created for the purpose, and shows how Porter Ferguson thinks a shop ought to look, how it should be equipped, how tools and units should be arranged for efficiency and labor saving, how the mechanic should go about the job, where to start, how to follow through without time-wasting backtracking, what tools to use and how to use them.

Included in the Porter-Ferguson

Hydro-Method Clinic, in addition to the showing of this film, are talks on the future of the body repair business, how to get business and how to make it pay.

These Hydro-Method Clinics are planned to be held under the auspices of leading jobbers and advance notices and invitations will be mailed to the trade by the jobbers in each territory where a Clinic is to be held.

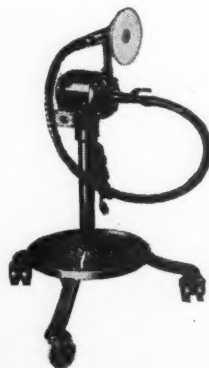


For **LASTING** Satisfaction
see *haskins* first!

● Not just today . . . not just tomorrow . . . but for years you'll get the tops in efficiency with Haskins Flexible Shaft Equipment.

Whatever your shop work—polishing bodies and fenders, sanding, or wire brushing, for instance—you'll find that Haskins machines pay for themselves time and again . . . with the performance you like . . . with the endurance you need.

Now, while you're thinking about it, get the facts on this precision-built, long-lasting, all-round shop tool. Write for the Haskins Automotive Equipment Bulletin. R. G. Haskins Co., 603 S. Washtenaw St., Chicago, Ill.



HASKINS RA-5 Direct Drive Equipment; 1/2 HP. 3450 R.P.M.; bench-height pedestal, 360° swing.



haskins
FLEXIBLE SHAFT EQUIPMENT

Whitaker Cable Holds Sales Conference

Executives and direct factory salesmen attended a Whitaker Cable Corporation General Sales Conference, at the Hotel President, Kansas City, Mo., recently.

The meeting was presided over by Jack P. Whitaker, President, and Victor Brewer, Vice-President in Charge of Sales. During the session Whitaker announced many new features in the line of merchandise and brought forth a lot of new merchandising and sales helps for the dealer.

The Whitaker Cable Corporation line includes: Battery Cables, Ignition Cable Sets, Loom Assemblies, Spark Plug Cable, Starter Cable, Battery Terminals and other cable products.



"Well, lady, did you come in to buy something, or are you just taking inventory?"



TAKE A TIP FROM ONE WHO SPEAKS FROM EXPERIENCE

For Better Brakes..

RECONDITION

**... Brake Systems with Genuine
WAGNER LOCKHEED HYDRAULIC
BRAKE PARTS AND FLUID**

Wagner Lockheed is the *one complete line* of replacement parts and fluid for *all* hydraulic brakes.

Money can buy no better hydraulic brake parts than Wagner Lockheed—so insist upon Wagner Lockheed for safety and dependability.

No. 21 HYDRAULIC BRAKE FLUID is an all-weather fluid. It is used by car and truck manufacturers, and is recommended for *all* hydraulic brake systems. It mixes with all other approved brake fluids and functions efficiently under all driving conditions.

For details on the complete line of Wagner Lockheed replacement parts and fluid, consult your Wagner jobber, or write us.

Wagner Electric Corporation

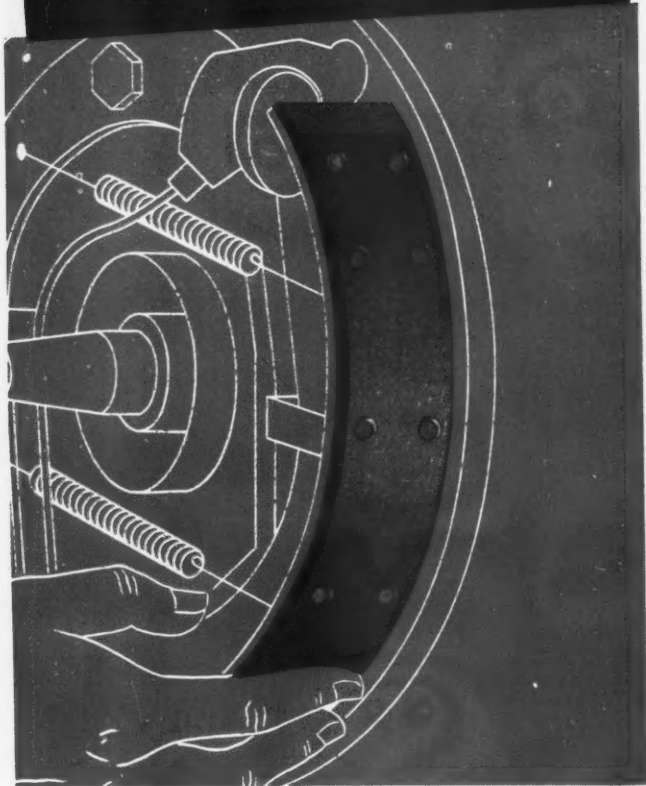
6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRel
CoMaX BRAKE LINING • AIR BRAKES • TACHOGRAPHS
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

H47-12

Reline with Thermoid ...Get Rid of Complaints



You get no complaints when you reline with Thermoid. The customary come-backs for readjustments are automatically eliminated. For Thermoid Brake Sets are custom-built . . . *certified* correct for each make of car by the famous Pittsburgh Testing Laboratory. Thermoid Precision Processing enables you to duplicate the hairline accuracy of new car manufacturers. The relined shoe fits the drum perfectly every time—the *first* time. Thermoid Company, Trenton, New Jersey.

Thermoid

Custom-Built Brake Lining Sets Plus "Precision Processing"
Equals Brake Perfection

Thermoid Company • Trenton, New Jersey

Thermoid • The Lining
That Gives You The Brakes

Copyright 1947—Thermoid Company

How to Service An

Servicing an air compressor is neither particularly difficult nor does it require much time. It is a machine and as such requires reasonable care and periodic attention.

Once a month the motor bearings should be oiled if it is sleeve type or greased if it is ball bearing type. At six months, a sample of compressor crankcase oil should be checked for its condition, which will govern the necessity for complete draining and refilling. This conforms to good automobile practice. Before refilling, flush out the crankcase and remove all sediment, using oil, not kerosene, gasoline or light petroleum products, because of the danger of fire or explosion due to heat of compression.

Periodically, the belt tension should be checked so that there is neither slippage or undue strain; slippage creates inefficiency and strain will overheat and damage bearings. If any one of the belts is worn, it is advisable to replace all of them with a matched set in order to give better service.

Repeated checks on the various air lines, as described earlier, are good practice so that any leak which may have developed over a period of time can be caught and remedied—reduced leakage cuts operating cost.

A few common compressor ailments are listed as follows together with probable cause:

1. Low pressure shown on gage. Check for leaks in the lines, belt slippage, blown gaskets, pressure switch or pilot valve setting at wrong point, or defective gage.
2. High pressure. Check the gage and pressure switch.
3. Pressure builds up too slow. Clogged filter, leaky valves, belt slippage, leaks in unit or shop lines, air load too great for the unit.
4. Compressor overheats. On a two stage machine, the high pressure intake valve may be leaking or the pressure switch setting is too high, putting pressure above the allowable top limit.
5. Excessive belt wear. Misalignment, belt too tight, belt slipping, or pulley wobble.
6. Knocking. Loose flywheel, dirty or broken valves, loose motor pulley, loose connecting rod, bent connecting rod, bearings, play in motor armature, wrist pin or piston hitting head of valves.
7. Safety valve blows. Check valve for dirt, incorrect setting, or wrong pressure switch setting.
8. Overload heater or fuse blows out. Low voltage, wrong pressure switch setting, excessive friction in compressor or wrong voltage.
9. Motor overheats. Low voltage, wrong voltage, worn bearing, defective starting switch in motor, friction in compressor, belt too tight, too frequent starting, dirt in motor, rotor rubbing on stator, shorted stator winding or motor grounded.
10. Motor bearings overheat. Misalignment, belts too tight, excessive end thrust, too much grease on ball or roller bearings, lack of lubrication or sticking oil ring on sleeve bearing.
11. Motor will not run. Blown fuse; broken lead wires; defective pressure switch; tripped overload

AIR COMPRESSOR

heater; defective switch in motor; defective condenser on capacitor motor; single phasing of polyphase motor or load too heavy.

12. Water in cylinder head or in oil. Compressor runs for too short a period of time.

13. Intercooler safety valve blow. Broken spring; safety valve set too low or leaking high pressure cylinder head valves.

14. Excessive oil passing. Broken rings; badly worn rings, piston and cylinders; or intake restriction by clogged filter.

Never forget that an air compressor is a machine NOT A TOY.

Hycon Master Cylinder

(Continued from page 64)

age between the cylinder and the brake pedal must be adjusted to allow the mechanism to retract fully. Otherwise, the brakes may apply themselves while the truck or bus is in motion. Pedal clearance should be adjusted to give from 1/16 to 1/4 in. between the pedal and the floorboard when the pedal is depressed as far as it will go. Too much clearance will mean loss of pedal travel and cancel the effectiveness of the brakes.

All fittings and connections should be checked for leaks when conversion to the Hycon is made. Only standard brake fluid should be used and normal bleeding procedures should be followed. A complete conversion should take, according to the manufacturer, about one hour.

The advantages claimed for the Hycon cylinder include fewer brake adjustments because of the preliminary pressure applied by the primary piston, and less brake lining wear because of the more gradual and even application of braking power.

The NOVI GOVERNOR SPECIAL continues to rank with the world's top racing cars. It was used recently to establish several new class records on the famous Bonneville Salt Flats where it was driven by Ab Jenkins and by his son.



When Selling Fan Belts Remember This

An Ordinary Fan Belt



Stretches



Then Slips



Then Wears



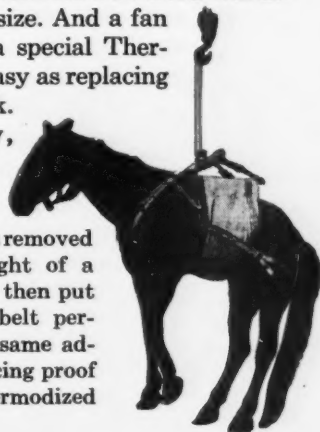
Then Fails

So for Both Quality and Profit Sell a Thermoid Fan Belt...

It's a Horse of a Different Color

Yes, a Thermoid Fan Belt is a horse of a different color. "Stretching"—the initial cause of most belt failures—has been eliminated. Pre-stretched by an exclusive process, Thermoid Fan Belts will always remain the same size. And a fan belt installation with a special Thermoid belt flipper is as easy as replacing the cap on a gas tank. Thermoid Company, Trenton, New Jersey.

A Thermoid Fan Belt was removed from a Buick, the weight of a horse suspended from it, then put back on the car. The belt performed perfectly at the same adjustment! That's convincing proof of the advantages of Thermoidized Pre-Stretching.



Thermoid

Thermoidized Pre-Stretched Fan Belts

Thermoid Company, Trenton, New Jersey

Copyright 1947—Thermoid Company

Generators (Continued from page 39)

passenger car units. However, regardless of the type of test instruments, the procedure for rebuilding or overhauling a passenger car generator is the same.

First remove the cover band and detach the field and output lead from the insulated brush. If the generator is of the three-brush type, the field lead will be attached to the third brush.

Next remove the two tie bolts which secure the both end-plates to the frame. Many mechanics prefer to punch or file mark both end plates and main frame to insure correct assembly in the event the dowell locating pins get lost.

Now remove the commutator end plate with its attached brush rigging, Fig. 1, and pull the drive and plate, together with the armature,

out of the frame.

Remove the pulley nut, press off the pulley, Fig. 2 and pry the Woodruff key out of the shaft. Now slide the armature shaft out of the drive end plate. Sometimes it's necessary to press it out.

Inspect the commutator carefully where the armature wires are soldered on to see if they are firmly attached and if any solder has been thrown out. The inner surface of the cover band should also be examined for bits of solder which have melted and been thrown from the armature. Examine each commutator bar for pits or burns, they usually indicate that the damaged bar is connected to an open or short circuited coil.

If the wires are loose or detached at the commutator or the solder has been thrown out, it will be necessary to resolder them as shown in Fig. 3 and very carefully remove the excess solder from between the commutator bars, Fig. 4.

The next step is to check for short circuits. This is done on the growler by placing the armature on the yoke of the growler and turning on the current. Lay a thin piece of soft steel along the armature slot. A hack saw blade will serve if a soft piece of steel is not available, Fig. 5. The blade will vibrate somewhat even if the armature is in good condition, however, rotate the armature and move the blade from slot to slot and if a short circuit exists in one of the

(Continued on page 89)

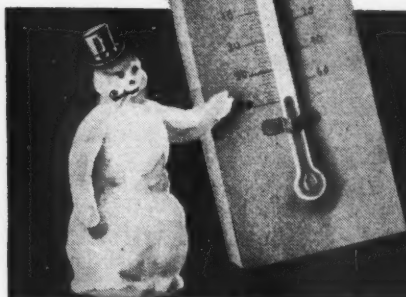
FROM 700° ABOVE TO 70° BELOW THE THERMOMETER READS MARVEL ALL THE WAY



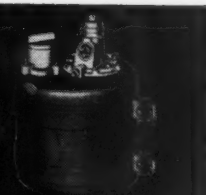
At a sizzling 700° which easily may be reached in a motor's upper cylinder zone, MARVEL closes heat-thinned gaps in vital lubrication protection. Added to lubricating oil, it spreads its tough, heat-resisting film on bearings and cylinder walls, shielding these all-important parts from excessive wear. From 150° to 250°, normal operating range, MARVEL is right on the job re-inforcing every lubricant to which it is added.

In oil and gasoline as well, MARVEL goes to work cleaning pump screens and preventing the formation of power-killing, fuel-wasting deposits throughout the motor. When the mercury dips to a freezing 32° and below, as it will on many a day this winter, MARVEL rises to the occasion with low temperature flow that means quicker starts, less battery drain, easier shifting and easier steering. ALL lube oils and gear greases will need MARVEL soon. At an astounding 70° below zero this remarkable additive still flows! That's the kind of dependable protection against cold weather driving difficulties it will pay you to sell your customers! Emerol Manufacturing Co., Inc., 242 West 69th St., New York 23, N. Y.

MARVEL MYSTERY OIL



MARVEL HI-REV—the rapid tune-up for motors that swiftly dissolves gum and sludge. A shop remedy for heavy duty de-sludging jobs. Ask for the facts on this trouble-shooting, de-sludging compound.



The **MARVEL INVERSE OILER**—a compact, top cylinder auxiliary lubrication system to meter Marvel Mystery Oil to critical upper cylinder parts according to engine needs.



"We'll have to hurry—the banks close at three."

We Hated Last Winter

You sent us letters and telegrams—you and your wholesalers did—asking for more WEED Tire Chains than we could supply.

You told us how many years you've been selling WEED Chains.

You said your good customers just *had* to have WEEDS.

A few of you said every time people saw a WEED Chain advertisement in a national magazine or newspaper, more of them came in and asked for WEEDS which you didn't have.

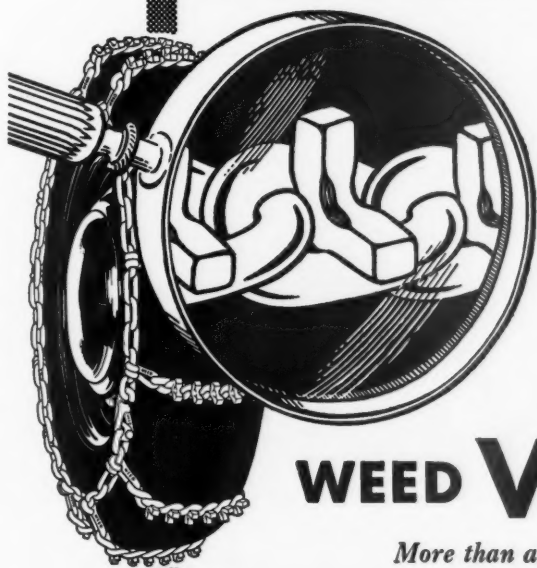
It was a headache for all of us

Some even thought we should stop advertising. But we had a good reason for

continuing our national advertising. The demand for WEED Chains has been built up over a period of 43 years. Demand for WEEDS is greater today than ever before—largely because WEED advertising has never stopped.

Year after year, we have kept on telling the people that winter driving without chains is unsafe—and that WEEDS are the best buy in tire chains.

Some day—perhaps next winter—there will be enough WEED Chains for all who want them. Meanwhile we suggest you place your order with your WEED Chain Distributor as early as possible.



Two-Way Grip.—Right and Left

288 Gripping Points

Heel and Toe Action

Start Easier • Stop Shorter

Hold Straighter • Wear Longer

WEED **V** BAR TIRE CHAINS

More than a new tire chain—a new idea in traction

ACCO

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.



**AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE**

In Business for Your Safety

OCTOBER, 1947

When writing to advertisers please mention Motor Age

85

DU PONT ANNOUNCES

DU CO

REG. U. S. PAT. OFF.

Metalli-Chrome

A New, Brilliant Automotive Lacquer

NOW AVAILABLE

Strikingly Beautiful!
Amazingly Durable!



The fiery beauty of flashing jewels—durability that sets new standards for automotive finishes—this is Du Pont's newest triumph, "DU CO" Metalli-Chrome!

The deep, glowing brilliance of a Metalli-Chrome finish is impossible to visualize, difficult to illustrate. You will have to see Metalli-Chrome to appreciate fully what it can mean to the refinish industry. New, stunning color effects never before possible—durability that cannot be compared to ordinary finishes—make Metalli-Chrome an outstanding profit opportunity.

The introductory range of Metalli-Chrome colors is limited to 10—browns, greens, grays and a blue.

Your Du Pont jobber has "DU CO" Metalli-Chrome in stock now. Get in touch with him—today—and start turning out jobs that will bring more and more business to *your* shop!

E. I. DU PONT DE NEMOURS & CO. (INC.)

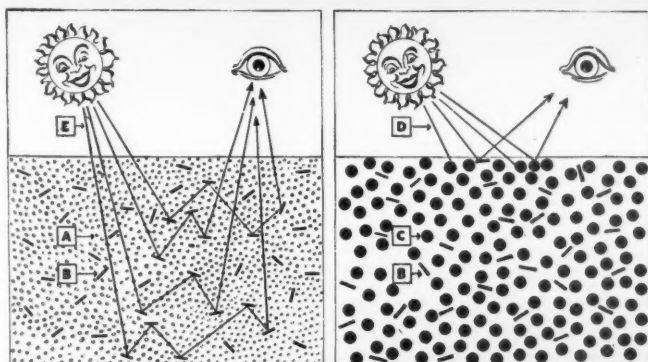
Finishes Division • Refinish Sales
Wilmington 98, Delaware



REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

Newest jewel of the highway—"DUCO" METALLI-CHROME



THIS 1946 BUICK, refinished in "DUCO" Metalli-Chrome Solar Gold, has been given a deep, rich, glowing beauty—a startling color effect that actually seems to improve the lines of the body by creating subtle tonal gradations on the contours.

CROSS SECTIONS OF METALLI-CHROME AND CONVENTIONAL METALLIC FINISHES—A & C: Pigment particles; B: Aluminum flakes; D & E: Light rays.

Note how light rays penetrate the Metalli-Chrome film (*left*) producing a depth of color and brilliance not possible when larger, opaque pigment particles block light at the surface (*right*) as in conventional finishes.

DURABILITY? This Chevrolet, refinished in Metalli-Chrome in 1941 had been driven 44,000 miles in five years of normal use when this picture was taken. The finish was *never waxed or polished*, washed occasionally with clear water. Yes, Metalli-Chrome is *amazingly durable!*



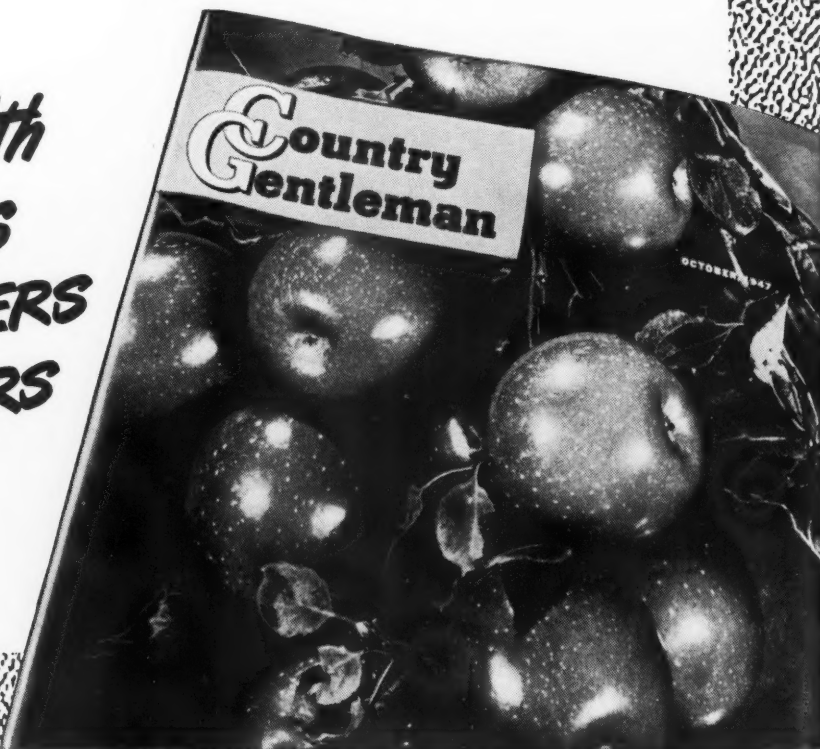
Your best rural customers read Country Gentleman

Rural auto dealers know this. Asked what rural magazine would be most effective, from an advertising standpoint, in helping them sell their prospects

**they chose Country Gentleman almost
3 to 1**

Automotive advertisers know this. They invest more advertising dollars in Country Gentleman than in any other farm magazine.

**No. 1 with
FARMERS
RURAL DEALERS
ADVERTISERS**



Generators (Continued from page 84)

coils the blade will tend to adhere to the armature while still vibrating when it is held over the defective coil.

There seems to be considerable misunderstanding regarding the use of a growler, and many of the descriptions pertaining to its use do not apply to the particular type of windings used on passenger car generators. Any mechanic can become very proficient in the use of a growler by simply testing an armature which is known to have a short circuit, and then testing a new armature on the same growler noticing the difference in the reaction of the strip of steel used in the test.

Some mechanics prefer to check the armature on the growler before resoldering any detached wires because if a short circuit exists, the armature will have to be replaced, and no time is wasted soldering.

The next step is to check the commutator for grounds. Touch one lead of the test light to the armature core, touch the other lead to each bar of the commutator as shown in Fig. 6. If the test lamp lights, indicating a grounded coil or bar, discard the armature.

The last test made on the armature is the open circuit test shown diagrammatically in Fig. 7. If an open circuit exists, the voltmeter will read full battery voltage between the bar which is connected to the open circuit and the one next to it.



"Got a match?"

If the armature has an open circuit which cannot be reconnected readily replace it.

Place the armature in a lathe and machine the commutator to insure a smooth concentric contact surface for the brushes, Fig. 8. Undercut the mica between the bars about 1/32 in. as shown in Fig. 4.

The armature now has a clean

bill of health and the next concern is the field coils.

Experience has shown that field coils very rarely fail in normal service, so many perfectly reliable shops make simple continuity and ground tests without removing the fields. They depend on the fact that, if the field coils are shorted or have too high resistance (neither of these conditions can be determined by continuity or ground tests) the generator will not func-

(Continued on page 90)

Formula for Quick Profits:
A Product that
SELLS
In a Display that
WORKS
for YOU!



The KEM-AERO FUEL FILTER with the Microporous PLASTIC Filter Unit. Here are a few features that make this ultra-modern engine accessory a sales natural —

1. **EXCLUSIVE** filter unit . . . stops dirt particles 1/1000 inch in diameter . . . will not break down and shoot harmful particles into fuel line.
2. **EXCLUSIVE** aluminum dirt collector . . . unbreakable . . . separates water from fuel.
3. **EXCLUSIVE** quick-acting drain plug . . . permits cleaning without dismantling filter . . . relieves vapor-lock instantly.
4. **UNIVERSAL** inlet and outlet couplings, allowing installation on most engines.
5. Made for **PASSENGER CARS, BUSES, and TRUCKS.**



KEM
Prefitted

Replace, Repair, Rebuild with **KEM**
KEM MANUFACTURING CO., INC.
 601 West 26th Street, New York 1, N. Y., U. S. A.

Generators (Continued from page 89)

tion properly when given a test run and the time saved on the many generators with good fields more than offsets the time wasted when it is necessary to disassemble (a second time) the occasional unit with defective fields.

Make the continuity test by touching one test point to each end of the field winding simultaneously. On three brush units, disconnect

the grounded end of the field to make this test. The lamp should light, indicating the field winding is not interrupted or broken.

The test for grounds is done in a similar manner. Touch one test point to either end of the field winding, the other test point to the frame, Fig. 9. The lamp should not light.

If the field coils pass both of

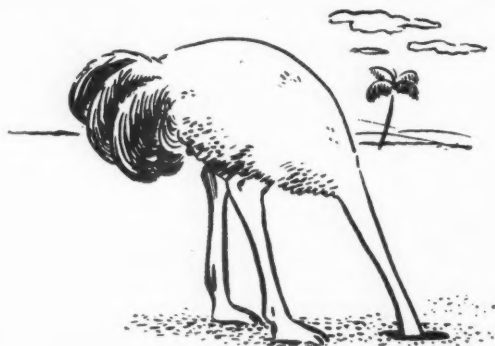
these tests, but the generator fails to function properly when assembled and run, disassemble the generator, remove the field coils and determine the field current draw as shown in the simplified sketch, Fig. 10. If the current draw is excessive, which means some of the turns are shorted, or too low, which indicates high resistance or partially burned conductors, the field windings will have to be replaced. (Desired field current draw is given in the MOTOR AGE Flat Rate and Tune-Up Manual.)

Retape the fields with a good grade of linen tape, as shown in Fig. 11. Impregnate them with insulating varnish and reassemble to the main frame.

Using a pull scale, check the brush springs tension and examine the brush holders for grounds. A test lamp should light when the grounded brush holder is tested. It should not light when testing the insulated brush holder. The insulated holder is the one from which the output lead was disconnected.

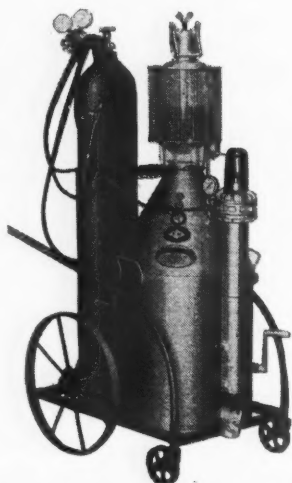
Reassemble the generator using a new bushing in the commutator end plate and a new bearing in the drive end plate. Install new brushes and carefully sand them to the correct curvature indicated in Fig. 12.

Finally, test run the generator with the meters connected as shown in Fig. 13. Adjust the rheostat so that the voltmeter reading corresponds to that given in the test data table in the MOTOR AGE Flat Rate and Service Manual, and if the current output (on two brush generators) is higher than shown in the table the generator is probably OK. On three brush units adjust the third brush to obtain the desired charge.



Out of sight...out of mind!

● Don't let your acetylene be "Out of sight—out of mind!" Users of "bottled" acetylene know that they often run out in the middle of a weld or cut—because the gauge shows only the available pressure and not the amount of acetylene that remains in the cylinder.



You see as you save with Sight Feed Acetylene Generators—because the carbide is always visible through the transparent Pyrex hopper.

Don't let your acetylene be "Out of sight—out of mind"—use Sight Feed. Get full details from your distributor or write for catalogue 44-G.

Sold only through
Recognized Distributors



THE SIGHT FEED GENERATOR COMPANY

RICHMOND, INDIANA



"My compliments to the chef."



Frank B. Gregg, Dodge Dealer, Pittsburgh, Pa.

"WHO WOULDN'T SMILE . . . for twenty-seven years I was one of the largest dealers in low priced cars in the state of Pennsylvania. My car and truck experience, I thought, was just about as complete as could be.

"Then, six years ago, came the opportunity to take on Dodge and Plymouth cars and Dodge *Job-Rated* Trucks. I seized the opportunity and it was the wisest business move I ever made.

"I now have a single dealer agreement embrac-

ing these three great vehicles. I have a huge sales and service backlog. I am able to compete for business in all price classes and markets. I know of no other dealer opportunity to compare with this one, and I think my six-year accomplishment fully proves the point."

. . .

DODGE • PLYMOUTH • DODGE "Job-Rated" TRUCKS

DODGE—DIVISION OF CHRYSLER CORPORATION
7900 JOS. CAMPAU, DETROIT 11, MICH.

"Got that job buttoned up?" he asked.

"The distributor's haywire," said Tommy. "I can't make any business with the cam angle. It varies all over the lot."

"Them distributor testers is funny things," said Larry. "They won't tell you nothin'—when you don't know how to use 'em."

"I've used it plenty. And I tell you there's something wrong with this distributor."

"Oh yeah?" said Larry, wiping his hands. He went over to the test stand and flipped a switch. He watched the dial a moment, then after a sidelong glance at Tommy he cut the current.

"Better phone Jack Davis for an-

other distributor," he said.

"I told you it was all shot," said Tommy.

"Why shouldn't you? Any dope can see that."

Tommy went to the shop office and sat down at Pop's desk as he used the phone. He was so intent on explaining about the distributor that he did not notice Pop walking in from the street.

"That's right," said Tommy. "A distributor for a 1937 Pontiac." He paused. "Okay. I'll run around and pick it up."

Pop hung his hat on a peg in the wall and came over to the desk as Tommy got up.

"You ain't orderin' a new distributor for that Pontiac that come in this mornin' are you?" he asked.

"That's what Larry said. The cam angle is never the same twice in a row."

"So that's what the old Pontiac expert said, eh? Well, you run around to Jack's but don't come back with no distributor. Tell him you want a Chevrolet starter drive end bushin'. It'll cost you just ten cents."

"But what good will that do?" asked Tommy, bewildered.

"Give it to Larry and tell him to install it on the bottom end of the distributor housin' of that Pontiac."

"He won't do it if I tell him."

"Just tell him I suggested it."

When Tommy returned with the bushing, he handed it to Larry and repeated Pop's instructions.

(Continued on page 94)



THE SEAL OF APPROVAL

Approved by those who know good gaskets.

For more than forty years, Fitzgerald gaskets have sealed in motive power dependably on countless motors and have satisfied millions of users.

See Your Fitzgerald Jobber.

THE FITZGERALD MFG. CO., TORRINGTON, CONN.

Branches at Chicago and Los Angeles
Canadian FITZGERALD Limited, Toronto

Fitzgerald
GASKETS

GASKET CRAFTSMEN SINCE 1906



"Gee, Mom, I wish you were in some other business."

Here's the smart merchandiser
for smart merchandisers!



Ask your WHIZ
jobber today
how to get
this attractive
sales-maker
at practically
no cost
to you!

R. M. HOLLINGSHEAD CORPORATION.
General Offices: Camden, New Jersey.
Canadian Offices: Toronto
Warehouses: Dallas, San Francisco, Chicago



PRODUCT OF
Hollingshead
LEADER IN MAINTENANCE CHEMICALS

"Oh, so now you're telling me?" said Larry, derisively.

"No, Pop is."

"Well, you take that bushin' to Pop and tell him I said —"

"You can tell him yourself now," said Tommy. "Here he comes."

For once, Larry did not try to conceal his resentment.

"What's the big idea of you but-

tin' in when I tell the kid here to do somethin'?" he demanded beligerently.

Pop scratched the point of his jaw. "Didn't you say you drove a lotta Pontiacs in your time?" he asked.

"What's 'at got to do with it?"

"A couple things. Maybe you never noticed there ain't no bushin'

at the bottom end of a Pontiac distributor shaft."

"Of course I did. But that ain't —"

"And when the engine gets a lotta wear on it, there's likely to be too much play at the bottom of the distributor drive shaft."

Tommy, who had been following Pop's words eagerly, snapped his fingers. "I get it!" he said. "The extra play lets the shaft wobble, and that makes the top of the shaft wobble a little, too. So the braker point gap varies all over the map."

Larry glared at him. "What instruction books have you been readin'?" he asked sarcastically.

"I'm sorry," said Tommy.

"There ain't nothin' to be sorry about," said Pop. "You're right. And now, Larry, if I was you, I'd put this ten-cent doohickey in the distributor housin' to take up the play."

Larry snatched the bushing from Tommy. "I'd better do it myself if I want it done right."

"That's one of the things I like about you," said Pop.

"Is that a crack?" asked Larry.

"No. You're always particular about little details. You remind me of a trackwalker on the section out where I used to live. He always went along with his nose almost glued to the track, like a beagle on a hot rabbit scent. He couldn't have missed a loose bolt in a rail joint if he'd tried."

"So what?" said Larry impatiently.

"So one day he followed the track right down into a ravine and up the other side—never even seen the roadbed had been washed out. But, as he said after the wreck happened, they couldn't blame it on a loose bolt."



THOUGHTS FOR MERCHANDISERS

**CUSTOMERS
DON'T WHISPER
SQUAWKS!**

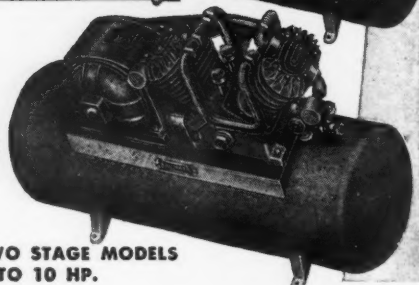


A complaining customer can be awfully expensive. Bad news travels fast. A sound idea for protecting your reputation for service is plenty of time and labor saving air operated equipment plus a dependable supply of air. When it comes to air compressors, no name is more highly regarded for dependability than BRUNNER. One good customer is worth more to you than the cost of any compressor—so why settle for anything less than the best?

BRUNNER MANUFACTURING CO.
Utica 1, New York, U. S. A.

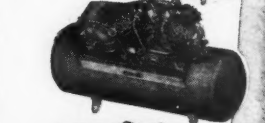
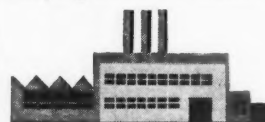


SINGLE AND TWO STAGE MODELS
1/4 HP. TO 10 HP.



AIR

helps you serve better





More jobs per day the MOPAR way!

That's not just fancy talk. It's based on fact! Progressive fleet owners who operate cars and trucks built by Chrysler Corporation find they can handle more repair jobs—can get cars and trucks out of the shop and back on the road quicker—with MOPAR Parts. That's because:

MOPAR Parts are made right! Chrysler Corporation engineers see to it that MOPAR Parts measure up to exacting high standards of quality and workmanship.

MOPAR Parts fit right! Like the originally installed parts, they must face rigid factory inspection. Their accurate fit speeds and simplifies installation.

MOPAR Parts work right! Top quality and proper fit

combine to give the long, dependable performance fleet owners want—and appreciate. So . . . keep the cars and trucks in your fleet on the job the MOPAR way. Always install MOPAR Parts!

Here's the way to get MOPAR parts



You can get MOPAR Parts and Service Packages for Plymouth, Dodge, De Soto or Chrysler cars, and Dodge "Job-Rated" Trucks from dealers for these vehicles.

CHRYSLER CORPORATION—PARTS DIVISION
DETROIT 31, MICHIGAN



Factory Engineered and Inspected for
PLYMOUTH • DODGE
DE SOTO • CHRYSLER CARS
DODGE "Job-Rated" TRUCKS

World Speed Record . . (Continued from page 45)

400 going back with the wind."

And he did . . . 403.135 mph to be exact.

Actually, Cobb explained, he was traveling about 415 when he emerged from the measured mile on that memorable last run, according to the car's own timing device.

First to greet the racer as Cobb

drove back to the timing tower was demure Mrs. Cobb. Next were Cobb's five British mechanics who have started Cobb and his present racer on every speed run it has made, but have never seen the combination break a record. Of necessity, they have been in the pits each time.

They were with Cobb in 1938

when he established a record of 350.2 mph, beating the mark set by Captain George E. T. Eyston, another Britisher, a few days before. They were still in the pits when Cobb came back the next year to better Eyston's new record which he had established after Cobb had returned to England. That mark of 368.9 mph for the mile stood during the war, only to succumb to the 25 mile per hour faster time set by Cobb last week.

The car that is the world's fastest is powered by two Napier 12-cylinder engines of 5½ inch bore and 5⅝ inch stroke, generating 1300 hp each.

The engines are hung on either side of a steel girder near the center of the car with the rear engine driving the front wheels and the front engines the rear wheels. The car has three speeds forward, no reverse; and Cobb shifts from first to second at 140 mph and into high at 240. The car must be pushed by a truck to start.

One unique feature is the cooling system which avoids the use of a radiator and at the same time cools the brakes. Cooling is by ice contained in a 75 gallon tank, piped to both engines and the brakebands.

The car is entirely enclosed by a hull of aluminum alloy, radically streamlined and weighing 400 pounds. The body is lifted over the driver, who is "sealed in" and must signal his crew with a horn. A canopy with a plexiglass shield provides visibility.

Weighing 7700 pounds, the car is 28.8 feet long, eight feet wide and only 4.3 feet high.



CENTRAL MIKE SAYS—
"Every Mechanic Needs These Two Sets!"

CENTRAL
Certified Accuracy
MICROMETERS

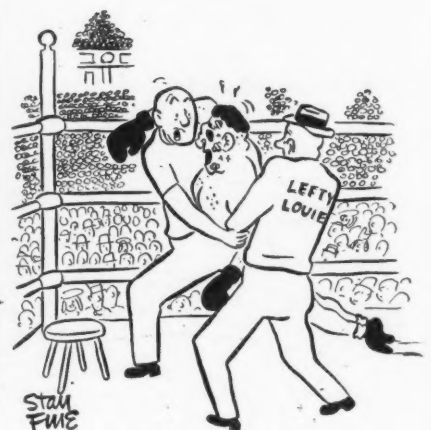
SET NO. 745 RL \$46.50
OUTSIDE MICROMETERS
 Range 0 to 4 inches.
 Complete with Ratchet Stops, Lock Nuts, Standard Test Gauges and DeLuxe Hinged Plush-Lined Case

SET NO. 808 \$12.00
INSIDE MICROMETERS
 Range 1½ to 8 inches.
 Complete with Extension Handle and DeLuxe Plush-Lined Case

WRITE FOR CATALOG NO. 17
 The entire line of individual micrometers and sets fully illustrated.

CENTRAL
 1907-1947
 FOR NEARLY A
 HALF CENTURY
 SPECIALISTS
 IN FINE
 MICROMETERS

THE CENTRAL TOOL CO.
 CRANSTON 10, RHODE ISLAND

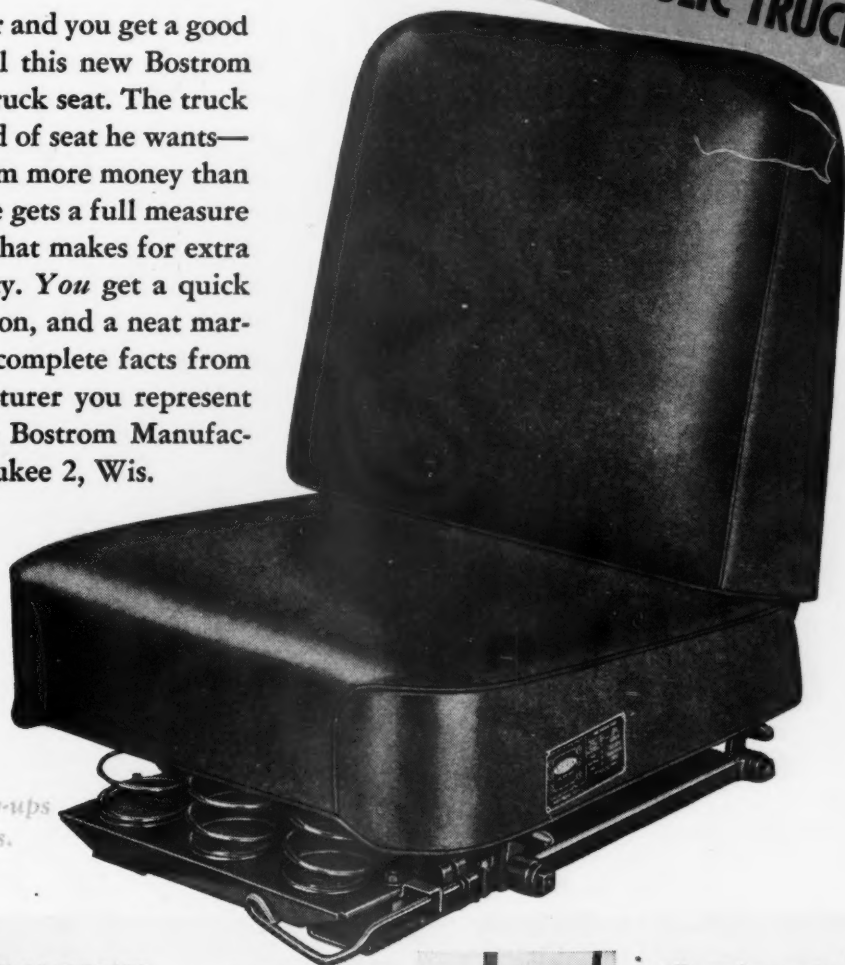


"Gad, I must look a sight."

Here's the Seat Truck Owners Are Asking About

- ELIMINATES SEAT REPAIR BILLS
- PROVIDES SAFETY AND COMFORT
- FITS RIGHT OVER THE GAS TANK

Both your customer and you get a good deal when you sell this new Bostrom No. 47 hydraulic truck seat. The truck owner gets the kind of seat he wants—a seat that saves him more money than it costs. Besides, he gets a full measure of driver comfort that makes for extra safety and efficiency. *You* get a quick sale, easy installation, and a neat margin of profit. Get complete facts from the truck manufacturer you represent or write direct to Bostrom Manufacturing Co., Milwaukee 2, Wis.



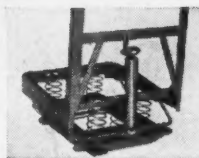
No more truck lay-ups for seat repairs.

No more costly upholstery jobs.

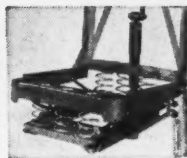


NOTE THE EXCLUSIVE FEATURES OF THE BOSTROM NO. 47

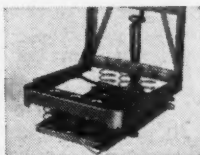
Hydraulic shock absorber takes the jolts instead of the driver. Prevents fabric wear.



All moving parts of suspension mechanism move in rubber. Nothing to wear out. No oiling.



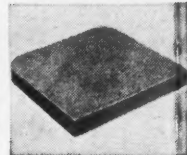
Durable frame for heavy duty use fits right over the gas tank. Has fore and aft adjuster.



Original seat coverings outlast ordinary cushions 6 to 1. Can be replaced at low cost in 10 minutes.



No coil springs to damage fabrics. Three inch bonded rubber pad lasts a lifetime.



Date for Business . . . (Continued from page 48)

such as offices, factories and homes where calendars, if they are tasteful and colorful, will be used.

An example showing the widespread visibility of calendars is pointed out in another study. Suppose your business is located in a city of 10,000 population and approximately 5000 people live in the vicinity. Fifty Jumbo calendars, if

displayed downtown, would deliver your message 1,170,000 times in a year. If only half of the people came to town once a week and each of them observed the advertising on calendars in only three different locations, your message would be delivered 22,500 times a week.

It is to your advantage to make the buyers in your trade area think

of your firm when they think of the products you sell, and the most highly advertised merchandise is the one which sticks in the buyer's mind. There are two ways of increasing sales in any business: by selling old customers more, which can be accomplished by the automotive industry in very few instances, or by getting new customers. The calendar is a daily reminder to prospective customers.

There are three popular types of calendars generally used by the automotive industry. Each of them through subject matter appeals to a different clientele.

A chubby baby, as in the illustration, will go straight to the heart of the women customers. Although it may be Mr. Smith's idea that the family needs a new car or a new paint job, it's Mrs. Smith's approval which clinches the sale.

In a small hand-out size, this type of calendar is effective because Mrs. Smith has no use for a bulky calendar but has just the spot in her kitchen for a small compact date reminder.

The bulk of automobile business, however, is placed by men, and the attractive nude, risque and girl subjects or fishing and hunting scenes appeal to a vast circle of customers. It is important in using calendars for advertising purposes that each type be placed where it

(Continued on page 100)

The Hope Line for Every Storage Need

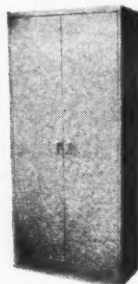
HOPE ALL METAL PARTS BINS

Hope all metal bins afford quick, orderly parts department expansion. They are specially designed for automobile parts departments according to the requirements of various auto manufacturers. Patented slip-in shelf dividers snap into position in 3 seconds—no bolts, clamps or screws. The special features of Hope Bins reduces parts handling time.



HOPE ALL METAL STORAGE CABINETS

Ideal for safe, dust-proof storage. Reduces petty thievery. Convenient for storage of costly small parts and office supplies. Holes punched on 2" centers for flexible shelf set-up. Available as storage cabinet, wardrobe cabinet or combination of both. Attractive chrome door handles equipped with tamper-proof, grooved key lock. Size: 78" high, 36" wide, 18" or 24" deep.



HOPE ALL METAL COMMERCIAL SHELVING

Designed for efficient handling of package or carton storage, and storage of large, cumbersome parts. Easily adaptable for display purposes. Useful for dead storage. Furnished with cross braces for extra rigidity. Can be furnished with closed vertical uprights for sides. Standard size: 36" x 12" x 84". Other sizes available.



WRITE FOR COMPLETE
INFORMATION
•
Early Deliveries

Hope Metal Products Company

1507 Rockwell Avenue
Cleveland 14, Ohio



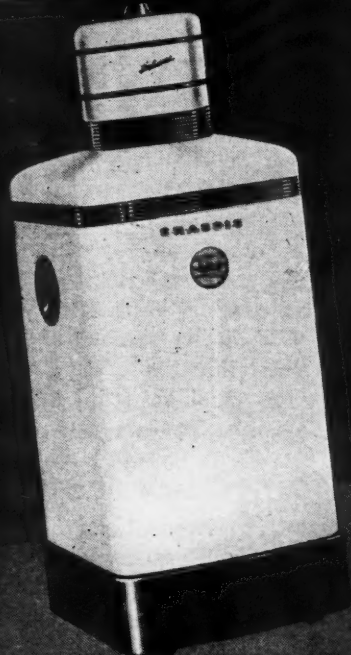
"How can I say 'No' in ten words?"

Only
ARO
has

"HI-LO"

HIGH PRESSURE

LOW PRESSURE



Model 50-D7
Chassis Lubricator

Here's one of the big time-saving features that makes ARO Lubricators so profitable for you!

It's the Chassis Lubricant Pump with ARO'S "Dual Ratio—Hi-Lo Pressure" design.

Other features of ARO design are equally advanced—assuring speedy, dependable performance to *improve your service and attract more lube business!* See your ARO Jobber or write The Aro Equipment Corporation, Bryan, Ohio.

ARO
LUBRICATING EQUIPMENT

gives the most appeal and where it does not offend. Just as the charming child would be out of place in a tavern, so would the nude be misplaced if sent into the home. Nudes and risques are usually distributed to garages, service stations, machine shops, lodges and spots frequented almost exclusively by men.

That this type has "eye-appeal"

as well as "buy-appeal" there can be no doubt, and titles in most cases can be worked cleverly into customer's ad copy.

Nudes and risque subjects have obvious appeal but the places in which they can be hung are more limited.

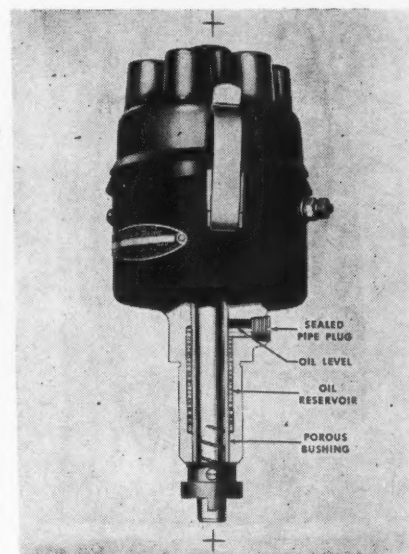
Typically masculine calendars are the hunting and fishing scenes

which all calendar companies have. The subject matter draws the eye as surely as the nude or risque and the glowing colors put this type in great demand.

No matter what the problem, or the people to be reached, there is both a calendar size and a calendar subject.

O-16 Delco Distributor

Delco-Remy has announced a new series of heavy-duty distributors in which shaft lubrication is provided by a built-in oil reservoir. A special porous bushing surrounding the



shaft carries the oil from the reservoir to the bearing surfaces.

According to the manufacturer, ignition distributors of this design need not be lubricated oftener than every 50,000 miles (or at time of major engine overhaul) except under conditions of extreme heat or other unusual circumstances. The reservoir in the distributor housing may be refilled with Grade 20W oil by removing a threaded plug which is afterward resealed with an oil-resistant compound.

(For further information use coupon on p. 61)

O-17 Casco Fan Hub

Casco Products have brought out a fan hub replacement assembly to fit any six inch rubber-bladed auto fan. Designed to replace worn brittle, split or dried out fans, this unit can be attached to the fan motor without special tools or equipment.

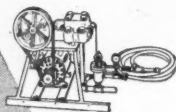
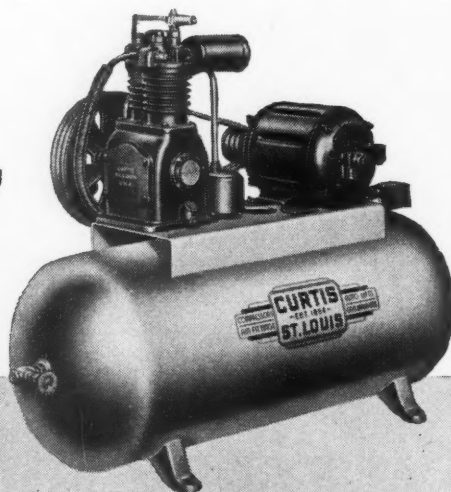
(For further information use coupon on p. 61)

"Positive Lubrication"

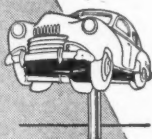
*Another
Long-Life Feature
of*

CURTIS

AIR COMPRESSORS



Curtis Hydraulic Car Washers



Curtis Hydraulic Car Lifts

The patented Centro-Ring self-oiling system with only one moving part assures proper lubrication at all times; uses less oil than ordinary splash oiling systems, contributes to the exceptionally long life of every Curtis Compressor. Other Curtis advantages include:

- Timken Bearings
- Automatic unloading starter
- Automatic welded electric tank
- Dust-proof enclosed compressor
- Precision construction throughout

Write for Bulletin C-6 for full information on Curtis Air Compressors, Hydraulic Car Washers and Full Hydraulic Auto Lifts.

CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company

1946 Kienlen Avenue, St. Louis 20, Missouri

93 Years of Precision Manufacturing

CURTIS PNEUMATIC MACHINERY DIVISION of Curtis Manufacturing Co.
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Please send me complete information on Curtis Air Compressors, Auto Lifts, and Car Washers.

Name.....
Firm.....
Address.....
City.....Zone.....State.....



Ride the WINNER!



EDELMANN'S Remarkable No. 80

Self-Calculating **FREEZ-D-TECTOR**

**Helps you sell
more anti-freeze**

**AUTOMATICALLY calculates freezing
point of anti-freeze solutions**

There IS no competition in the field for the Edelmenn FREEZ-D-TECTOR! It's 'way out in front with advantages you'll be quick to appreciate. It's a complete anti-freeze testing laboratory in one simple, easy-to-use unit . . . a dramatic anti-freeze salesman that sells through its showmanship.

This accurate calculator eliminates guesswork! Gives the exact quantity of anti-freeze required for first fill and refill protection at desired temperatures.

\$5⁷⁵
DEALER
PRICE

**ORDER FROM
YOUR JOBBER
NOW!**



**BIGGER
STURDIER
EASIER TO READ
ALWAYS CORRECT**

**Tests All Popular
Brands of Anti-Freeze**



A turn of the cap instantly calculates freezing point



Only 1 column visible. Only 1 number to read



All tables in plain view. No separate or wall charts

E. EDELMANN & CO.

2332 LOGAN BLVD., CHICAGO 47, ILL.

the JACK *for every job...*



Backed by over 30 years experience in fine Jack Building

G2459R

*** Fully Patented** Ausco trademark Reg. U. S. Pat. Off.



...and **MASTER of ALL!**



the NEW AUSCO Hydraulic Curb Jack

● **Ideal for FAST and EFFICIENT Curb, Shop or Road SERVICE!** Ausco's New Curb Jack is built to your specifications!

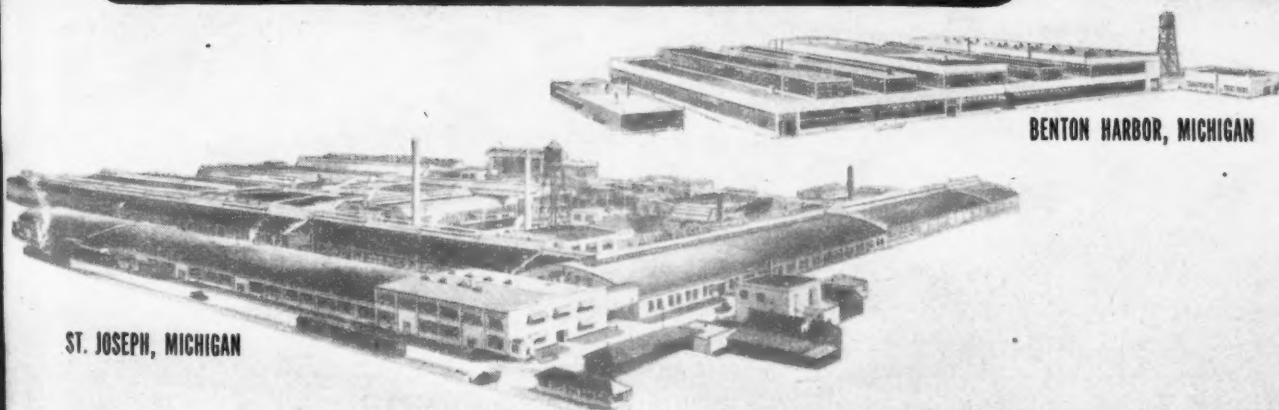
Streamlined for modern efficiency, and built to stand many years of hard wear-and-tear, its rugged one-piece malleable iron frame eliminates "springing"...the power unit is fully enclosed to protect the precision mechanism against dirt and injury. There are no exposed springs to snap or snag. Large, free-moving swivel wheels permit instant "spotting"...the sturdy saddle is low enough to get under any part of the car or truck. Power unit may be removed by simply removing four bolts for quick servicing. The handle is released in a second to give you more working space or for easy loading for road service.

The New Ausco Hydraulic Curb Jack raises a ton-and-a-half car up to 18½ inches...quickly and easily; lowers it evenly at the speed you want. We'll be glad to send full details on this "Master of All Jacks". AUTO SPECIALTIES MFG. CO., St. Joseph, Michigan; Windsor, Ontario, Canada.

IT'S **AUSCO** * FOR THE LATEST IN BOTH MECHANICAL AND HYDRAULIC JACKS

SPECIFICATIONS:

Capacity (tons)	1½
Saddle low point	4"
Maximum frame height . .	6"
Maximum saddle height . .	18½"
Saddle size (dia.)	6"
Handle length	50"
Overall chassis	22"
Rear wheels (dia.) Swivel .	2½"
Weight (lbs.)	80



ST. JOSEPH, MICHIGAN

BENTON HARBOR, MICHIGAN

The New Ausco Hydraulic Curb Jack is designed and engineered by one of the world's largest builders of fine jacks. All of the skill and experience gained through over 30 years in the manufacturing of hydraulic and mechanical jacks is built into the New Curb Jack. Authorized Ausco Service Stations are conveniently located throughout the

United States to give quick and efficient service. A complete stock of parts and service facilities are maintained at all times. Every Ausco Jack is guaranteed against defects in material and workmanship...and every Ausco Jack is reasonably priced to give you the finest quality and workmanship your money can buy.

Pike's Peak (Continued from page 53)

men had been racing side by side, Unser would have crossed the summit flagline just 14 feet ahead of the challenger.

J. C. Shoemaker, a local driver, pushed his Miller special to a fourth place time of 17:57.3. Johnny Mauro, of Denver, in another McDowell, was clocked at 19:24.58 and

Bill Milliken, of Williamsville, N. Y., drove his Bugatti special over the unique speedway in 21:02.

Hugh Thomas, of Denver, conked out five miles short of the summit when his V-8 "Shanahan's Special" caught fire.

Delwar Desch and Walt Killinger were forced out by motor trouble.

O-18—Bryant Announces New Air-Hydraulic Press

Bryant Products have announced a new air-hydraulic press for light forming, riveting and assembling. This press is a compact unit which features controlled ram speed and controlled pressure, ram speed being variable from 1 to 40 strokes per minute, with fast return regardless of cycle speed. The distance between the ram face and the table is adjustable by means



fendix

The Leading Automobile Underbody Protective Coating and Sound Deadener

FREE PROMOTION MATERIAL



In addition . . .

You get FREE hard-hitting posters, demonstration racks, counter cards, mailing pieces, newspaper mats, personalized merchandising helps . . . all designed to help you make extra profits from selling Fendix to every new car customer.

Yes, teaching your service men and your salesmen right in your own shop is a regular part of our function in establishing you as a Fendix dealer.

Trained field service men show your shop personnel the correct way to spray Fendix for a perfect job. Your salesmen are shown the best tested methods for selling this fast-moving, high-profit underbody coating. We help you set up a tested promotion campaign. These field service men are as close to you as your telephone for assistance and service.

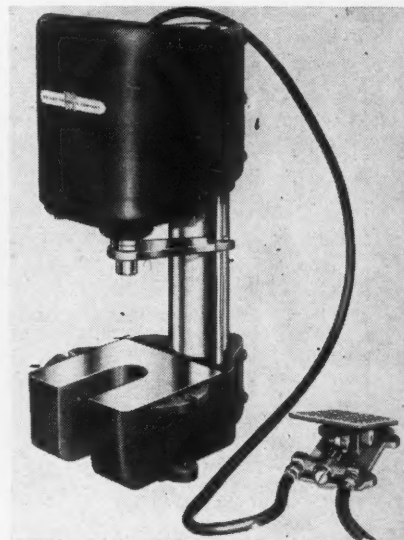
Sales-Service Offices in principal cities. Contact your local offices or write direct for further information.

THE DAVISON CHEMICAL CORPORATION
Progress through Chemistry



BALTIMORE-3, MD.

*REG. U. S. PAT. OFF



of three Allen head socket screws at the back of the head. Standard controls include 3-way hand or foot valve, and air line regulator valve.

This press is available in three sizes, all basically the same in operation. The No. 9, illustrated, exerts a pressure of 900 lbs. on the down stroke and 70 lbs. on the up stroke. Special columns and bases are available.

(For further information use coupon on p. 61)



"Are you going to give me another piece of candy, or do I go over your head and ask Granny?"

Now...

ANOTHER OUTSTANDING

WHEEL-STYLE

DEVELOPMENT

BY



**WORLD'S LEADING PRODUCER
OF DISTINCTIVE WHEEL ACCESSORIES**



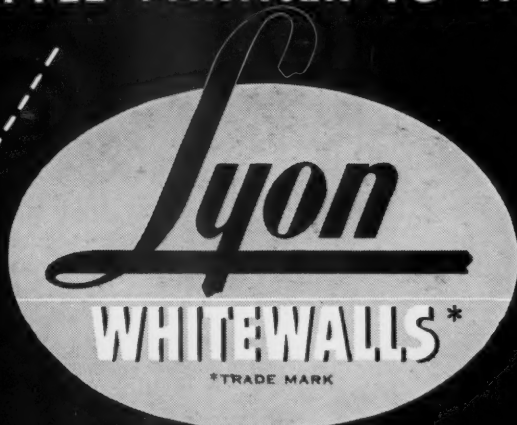
THE NEW STAINLESS STEEL *Lyon*
WHEEL COVER

- ★ DRESSES THE WHEEL IN STAINLESS STEEL
- ★ WILL NOT RUST OR TARNISH—MAKES WHEELS EASY TO CLEAN
- ★ TWO SIZES FIT ALL 15" AND 16" WHEELS—NO INVENTORY PROBLEMS
- ★ SNUG, SOLID FIT—NO INTERFERENCE WITH WHEEL WEIGHTS
- ★ EASY TO INSTALL—EASY TO REMOVE

Made under one or more of the following patents: RE. 19,466 and RE. 19,467.

List price \$19.95 per set of four. A Fair Trade product sold under applicable Fair Trade laws.

... STYLE PARTNER TO FAMOUS

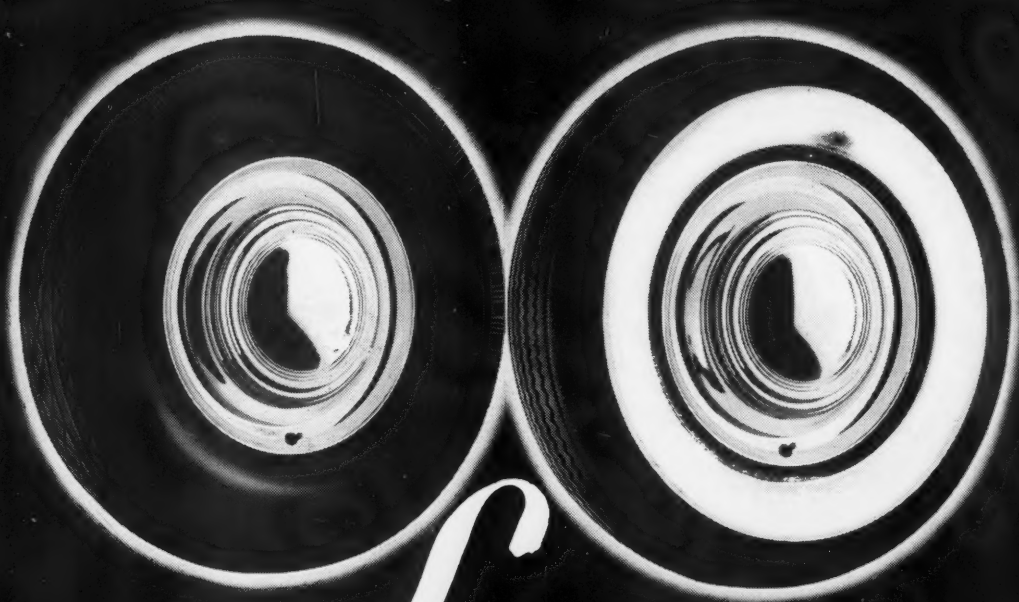


"AMERICA'S FAVORITE WHITE WALLS"

Now on over 3,000,000 automobiles . . . the
most widely accepted car-appearance accessory in history!



Prices: Standard steel model
(16" wheels) \$6.95 per set
of four. Deluxe steel model
(15" and 16" wheels) \$9.95
per set of four. A Fair Trade
product sold under applicable
Fair Trade laws.



Lyon

**WHEEL COVERS LOOK EQUALLY DISTINCTIVE
ON CARS EQUIPPED WITH EITHER BLACK
OR WHITE SIDE-WALL TIRES**

the

LYON LINE IS GROWING!

*Now, a choice of two distinctive style items to suit the taste of every
discriminating car owner*

**WATCH FOR STILL ANOTHER LYON
DEVELOPMENT TO BE ANNOUNCED SOON**

Lyon

INCORPORATED, 13881 W. CHICAGO BLVD., DETROIT 27, MICHIGAN

Clearing House (Continued from page 55)

are taking in air, it will undoubtedly cause an unusual rise in the water level in the radiator and, of course, cause considerable loss out the overflow pipe. The other condition is that of cylinder head gaskets. If these gaskets have been on for some time, it is quite possible that there is a compression leak in the gasket between the combustion chamber and the water channel. Under this condition, compression pressure would be allowed to leak out into the water channel and would cause a pressure rise in the water level in the radiator, forcing the water out through the overflow pipe.

My first suggestion, therefore, is that you overhaul the water pumps and the second suggestion that you install new cylinder head gaskets.

If neither of these operations correct the trouble, then I suggest that you remove the water pump and cut slots in the vanes of the impellers so as to cut down the efficiency of the pumps. This practice amounts to a correction of the effect and not the cause, but under some conditions it is justified. I believe, however, that you will find the trouble to be an air intake into the cooling system either through the water pumps or through the cylinder head gaskets.



"Scuse me. I wanted to see your wife about what color to paint these shutters."

Master Cylinder Cup Trouble on '38 Plymouth

I installed a master cylinder cup in a 1938 Plymouth. The job came back within two months with the back of the piston considerably scored and cut.

I installed another one which came back in less time than the

first one I had installed.

The cylinder was then slightly polished (it seemed very smooth). All new parts were installed. The job has been out for quite a few months with no indication of any difficulty. The reason I only installed a cup the first two times was because all the other parts seemed to be perfect.

I would appreciate your advice as to what you think was wrong with

(Continued on page 112)



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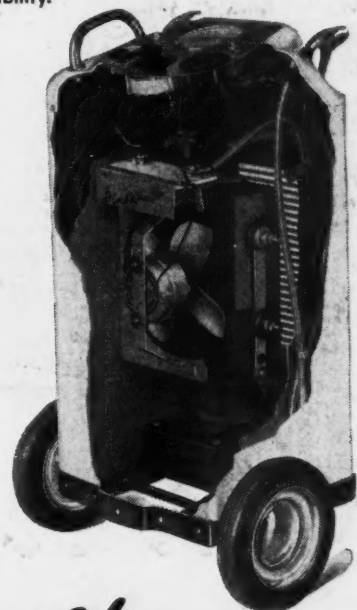
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Merchandising Division

Toronto, Ontario

Toledo 1, Ohio



Clearing House (Continued from page 109)

this job and what caused these two cups to go the way they did. New Jersey subscriber.

YOU undoubtedly must have had a worn piston which permitted too much clearance between the piston and the cylinder wall. Undue clearance at this point will cause the rubber of the cup to be

squeezed in that space under pressure and chew it up.

You should have installed a new piston the first time and undoubtedly would have avoided this difficulty.

It is good practice at all times, especially after a car has gone 15,000 to 20,000 miles, when master cylinder work is necessary, to re-

place the piston, both to remedy the above condition as well as to be sure that a proper seal is obtained at the secondary cup on the other end of the piston.

Should it be necessary to hone the cylinder, use oversize pistons.

Chevrolet Jumps Out of High Gear

I have a 1939 Chevrolet that jumps out of high gear. Can you give me any information on how to overcome this trouble? The transmission is O.K., I put on new vacuum unit but did not help it. Pennsylvania subscriber.

THE first thing I would look at on this car would be the universal joint to make sure that this is tight. However, I am more inclined to believe that the trouble is caused by misalignment between the transmission and the clutch housing. This can be checked by removing the transmission and.



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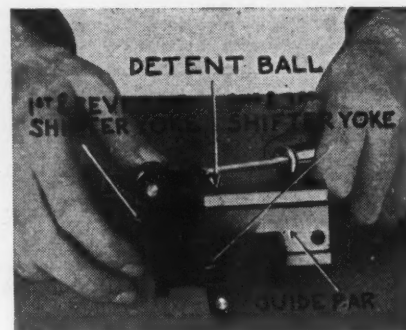
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then by means of a dial gage, check the surface of the clutch housing. This is done by mounting the dial gage on the rim of the flywheel and then cranking the engine slowly by hand. If the machined edge of the housing is more than .003 in. out, it should be trued. You should also check the rotation of the flywheel by mounting the dial gage on the edge of the flywheel housing with the dial gage contacting the flywheel.

Also make sure that the detent springs on the transmission shifter rods are of sufficient tension to keep the balls in place while the transmission is in gear.

If this does not overcome your trouble, you will find the difficulty in the transmission itself, possibly worn gears or defective bearings.

(Continued on page 114)

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OCTOBER, 1947

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113

Clearing House (Continued from page 112)

More Power Wanted In This Chevrolet

I have a customer who wants a Chevrolet 47 high torque engine installed in his 42 deluxe sedan. I believe that all parts are interchangeable such as the head, flywheel, bellhousing, engine side mounts, and so forth, with the ex-

ception of the oil pan. The high torque was 3 15/16 in. stroke, the old 3 3/4 in.

This customer wants power on mud roads and speed on pavement. Would you advise installing a lighter flywheel? This man has the idea that by taking a pound or so off the back of the flywheel allowing the engine to turn up, would

give him 30 to 35 more horsepower.

Any help that you can give me on the change of this engine will be great appreciated. Delbert A. Davis, P. O. Box 114, Mystic, Iowa.

UNDoubtedly anything that you can do to enlighten reciprocating and rotating parts on an engine will aid in developing greater power. However, I do not think that lightening the flywheel on a Chevrolet will give as much as 30-35 horsepower. That's about a 33 per cent increase, and I don't think it's possible to get that much more power without doing a lot more work.

You would undoubtedly have to do something to get more gas through the engine—such as increasing compression, and special carburetors are available which would also help.

I would like to point out in connection with reducing the weight of the flywheel that this would tend to make the engine run rough at idling speeds, and if your customer expects to use the car for ordinary city driving that he will find the performance very much impaired. By using high octane fuel it is, of course, possible to use a higher compression ratio and this can be obtained by planning approximately .060 in. from the cylinder head.

(Continued on page 116)



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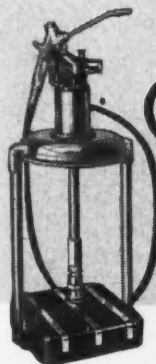


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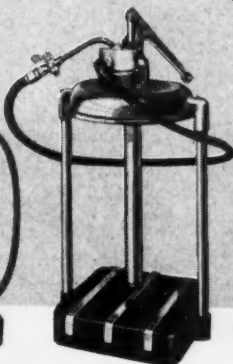
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Clearing House (Continued from page 114)

Engine Noise That Sounds Like a Tappet

We have a 1938 L-38 Oldsmobile 8-cylinder motor No. C2188569 which has run 28,000 miles.

For the past three months it has had a noise that sounds like a tappet. We adjusted tappets, still the noise. Then the motor was taken down, valves refaced, and so

forth, springs tested, lifters checked, camshaft checked, new timing chain installed and piston rings and wrist pins inspected. Oil pump and distributor inspected. Still the noise. California subscriber.

FROM the description you have given of your trouble, it would

seem that it comes at camshaft speed. On the 1938 Olds, they have had some trouble with a noisy fuel pump which was overcome by changing the straight coil spring to a spring having a cone-like shape. I would suggest that you try running this car without the fuel pump and see if the noise is eliminated.

While you have checked the lifters, there is a possibility that one of the lifters has become cracked. This crack would be very fine and rather difficult to see with the naked eye. In this connection, I would suggest that you try holding each of the valves and lifter assemblies in the fully opened position, one at a time, to see if the noise is eliminated. If you find that the noise is eliminated when one particular valve is held open, your trouble is undoubtedly in the particular assembly.

Similar noise sometimes results from a cylinder head gasket which extends over the cylinder bore. Then when the piston comes to the top of the stroke, it strikes this gasket resulting in a noise. However, the noise is more like a knock than a tappet sound.

Front End Checks But Buick Pulls to Right

I have a 1939 Buick Model 61 that leads to the right of the road all the time. I have set the front end in about all positions possible to attempt to remedy this, but



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without success. The car has never been in a wreck, and the owner says it has never hit the curb or a hard bump. Michigan subscriber.

IN view of the work you have already done on this car, I am inclined to believe the trouble is due to the fact that the front and rear wheels do not track. I suggest that you place the front wheels in a straight-ahead position, remove the hub caps from the front and rear wheels, and measure the distance between the center of the front wheel spindle and the center of the rear axle shaft. Make this measurement on each side of the car and compare them to see if they are exactly alike. If they are not, it would indicate that the rear axle housing is not true with the center line of the car, and it will have to be lined up by adjusting the strut rods alining the torque tube with the rear axle housing.

I would recheck the steering gear in its relation to the position of the front wheels by disconnecting the drag link at the Pitman arm after first placing the wheels in a straight-ahead position. Then I would go over the points of adjustment of the steering gear, being sure that these adjustments are made so that there is no lost motion when the gear is in the straight-ahead position. I would set the steering gear up a little in this position, and then adjust the drag link to the Pitman arm so that it will connect without changing the position of the front wheels. Then I would set caster and camber of both wheels to one degree positive for both angles. Toe-in should be set at not more than 1/16 in.

Even though you have the correct amount of toe-in, it would be well to check to be sure that the toe-in of each wheel is equal. Start with the wheels straight ahead, and then adjust each tie rod an equal amount so that you have a total of 1/16 in.

Shifting Trouble On '39 Packard

I have a 1939 Packard. When shifting from low to second, the shifting mechanism seems to lock, and I have to jiggle it around to

make the shift. Can you tell me what is wrong? California subscriber.

THIS condition is likely caused by the fact that the shift levers at the bottom of the steering column did not line up in the neutral position. I suggest that you bring these levers together and insert a pin through the alining holes to hold them in this position and then disconnect the shifting levers from

the rods at the transmission. Then adjust the short rod between the operating levers which are just ahead of the transmission and the levers at the bottom of the steering column. This adjustment should be made so that, with the operating levers in neutral at the bottom of the steering column and the levers on the transmission also in neutral, the rods should be the right length so that the clevis pins will enter the yokes.

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NECO VALVE PULLER



Willys Front End . . . (Continued from page 66)

tires at equal pressure all around, the camber should be set at 1 Deg. To accomplish this add or remove shims in equal amounts at both bolts behind each bracket.

In making toe-in adjustment be sure the steering system is centralized; have the steering gear arm (pitman arm) in the center position of its total swing, the steering wheel spokes parallel with the front

seat, and the front wheels in the straight ahead position. It should be noted that the steering gear shaft has a notch milled in it at the steering wheel end which should point up and align with the mark on the top hub of the steering wheel. There is also a mark on the steering lever shaft which should align with a mark on the steering gear arm.



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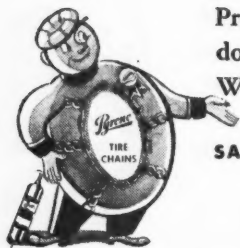


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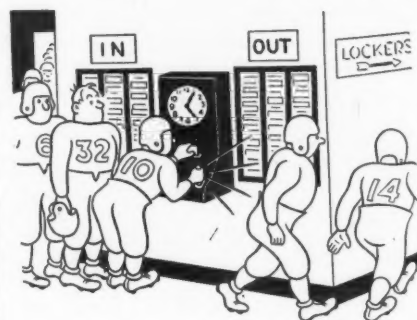
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Toe-in should be set to $\frac{1}{8}$ in. using a "trammel type" gage rather than the so-called "ouija board type." Do not use a straight edge along the sides of the tires because the tread of the rear wheels is wider than that of the front wheels, and an adjustment so made will result in greater toe-in than is needed or allowed by factory tolerance.

Adjustment is made by changing the lengths of the tie-rods at the wheel ends. The tie-rod-ends at the wheels are screwed into sleeves which in turn are screwed onto the ends of the tie-rods proper. Clamps at each end of the sleeves hold them from turning out of position. The threads of the sleeves are so designed that they may be turned to lengthen or shorten the tie-rods without having to first disconnect them at the central point. Change the length of the right tie-rod first turning the unclamped sleeve until the right wheel is in the straight ahead position, then change the length of the left tie-rod until the left wheel is also in the straight ahead position. With toe-in thus set at zero proceed to set in the $\frac{1}{8}$ in. of correct toe-in by turning each sleeve an equal amount. By this method the steering system will remain centralized in the straight ahead position.

The repairman should be careful not to get any grease on the large rubber blocks that support the spring leaf ends on these cars. The rubber is not oil resistant so that the riding quality of the car may be adversely affected if contact of the blocks with petroleum products is permitted.



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Packard Glass (Continued from page 57)

The window glass is lowered so that the rollers on the window regulator can be disengaged from the roller plates on the bottom of the glass. The two washers and wire retaining pins are removed from the roller studs. The window regulator arms are run upward, allowing the disengaged glass to move toward the bottom of the door

enough so that the glass can be tilted toward the front of the door. The glass can then be removed through the large access hole in the metal door inside panel near the bottom of the door.

To remove the lifter channel from the glass, it is necessary to drive it off with a wooden block and a mallet. Care must be taken

when installing the new glass in the channel, to make sure that the channel is in exactly the correct location on the glass before driving it in place. (The application of a small amount of engine oil will cause the glass seal to expand to the glass tightly and will make assembly easier.)

The glass is re-assembled to the doors by reversing the preceding procedure.

The front door ventilating window can be removed by lowering the drop window as far as it will go and removing the door window garnish molding. All the screws which hold the ventilating window in place are then removed. This will permit the ventilating window to be tilted towards the inside of the car so that the screws which hold the upper pivot can be removed. The nut, washers and spring are then removed from the lower pivot and the ventilating frame is lifted out of place. This frame and glass assembly are usually the parts that need replacement.

The first step in removing the drop glass in the rear door is the removal of the door window garnish molding and the door wind deflector. This is accomplished by removing all the screws from the garnish molding and removing the wind deflector screws from the ventilating window division bar and pull-

(Continued on page 122)

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Replacing Packard Glass

(Continued from page 120)

ing the latter out of place. The garnish molding is then pulled toward the inside of the car at the top, lifting up until the door lock rubber push button hits the molding. Bumping the molding with the hand will allow the rubber push button to come off and the molding will come out.

The door window regulator and remote control handles are removed. The glass is run down and the trim panel removed. The wire retaining pins and washers which hold the window regulator rollers on the window glass channel roller plates are then removed.

On the rear end of the ventilating window, under the ventilating window assembly, there is a bracket. After prying the ventilating window division bar so that it spreads the window glass runway, the flange of the fabric glass runway is turned down. The door glass is then raised, tilted toward the inside of the car and removed from the top. Bending this glass runway flange will let it act as a lead for the glass, while spreading the ventilating window division bar allows the glass to come out easily.

The rear door ventilating window can be removed by removing the door window garnish molding and the door wind deflector. The glass is run down. The top exposed screw

(Continued on page 124)



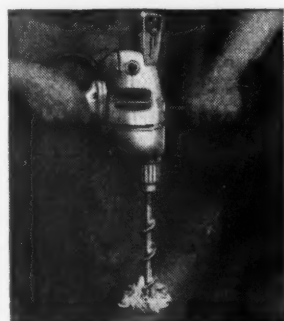
"... and don't get that collar rusty."

WORLD'S STANDARD
ELECTRIC DRILL

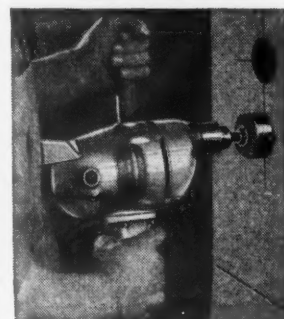
BLACK & DECKER
1/2" STANDARD DRILL
\$53.00



DRIVES TWIST DRILLS up to
1/2" diam. in steel



DRIVES WOOD AUGERS up to
1" diam. in hardwood



DRIVES HOLE SAWS up to
3 1/2" diam. in sheet steel

Saves You Time . . . Cuts Costs The Right "All-Purpose" Drill

The pictures tell the story of why the Black & Decker 1/2" Standard Drill leads in popularity with electric tool users. The spindle speed is just right for all sorts of general purpose automotive work in metal, hardwood, plastics, etc. Perfect operating balance, weighs only 9 3/4 lbs. Minimum spindle offset and horizontal spade handle designed for work in close quarters. And the tool is expertly built of quality materials to

give years of service. Universal (A.C.-D.C.) motor; standard voltage, 110; also available for 32, 220 or 250 volts.

Ask your nearby Black & Decker Distributor to show you this most popular Drill of many uses. And remember, he's ready to give you expert help on any other tooling problem. For your free copy of our catalog, write to: The Black & Decker Mfg. Co., 627 Pennsylvania Avenue, Towson 4, Maryland.

LEADING DISTRIBUTORS



EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

MULTIPLY
Your Drill's
USEFULNESS
with these
ACCESSORIES

HOLE SAWS: Cut clean, round holes in any material a hack saw will cut; 1/2" to 4" diameters.

BENCH STANDS: Quickly convert your Portable Drill to drill press use for accurate and heavy-duty work.

RIGHT ANGLE ATTACHMENT: For drilling and boring around corners, in close clearances.

FEED SCREWS: A mechanical "push" for constant, steady feed pressure in close quarters.

Packard Glass (Continued from page 122)

is removed from the rear of the door trim panel and all screws are removed from the ventilating window. There is a cover plate over the cut-out at the top of the door inside panel at the ventilating window lower pivot. This is bent down with a pair of pliers. The ventilating window lower nut, washers and spring are next removed.

The ventilating window is pulled toward the inside of the car and the screws which hold the upper pivot are removed. The glass and frame can then be lifted out of the opening.

If it is necessary to remove the rear quarter window drop glass (on the coupe model) the garnish molding, and regulator handle must

be first removed. The quarter trim panel and arm rest are then removed by loosening the trim fasteners down the body pillar at the front of the trim pad and removing the screw in the bracket at the bottom of the arm rest. The trim pad is then pulled forward and downward to disengage the bracket at the top of the arm rest from the quarter window frame.

The glass is lowered as far as it will go, and the wire retaining pins and washers are removed from the regulator rollers, disengaging the rollers from the channel roller plates. The glass can then be lifted up and out of the door.

O-19 Reynolds Automatic Pressure Cleaner

Reynolds Industries Corporation have announced that they are ready to start deliveries on their new "Hydra-Blast" — an electrically heated automatic pressure cleaning machine. A compact unit that requires no exhaust system, the "Hydra-Blast" can be used in the interior of automotive and industrial establishments.

Features are: Finger-tip control of water, pressure and chemicals; visible indication of the chemical supply in the tank; a pilot light to indicate when the current is on; and an automatic current shut-off if the water supply fails. The "Hydra-Blast" delivers 50 gallons of chemically treated hot water per hour, at a minimum pressure of 150 lbs.

(For further information use coupon on p. 61)



"I don't care how much money you can pick up washing cars on the side, Hawkins."

Build SAFETY into BRAKE JOBS

USE 

HYDRAULIC BRAKE PARTS



**BULK PARTS ★ WHEEL KITS
MASTER CYL. KITS ★ BRAKE HOSE
STOP LIGHT SWITCHES**

Make sure of customers' safety with these dependable, precision made brake parts!

ORDER FROM YOUR
JOBBER TODAY

**A
DEPENDABLE
MANUFACTURING
SOURCE OF
SUPPLY**

CHEFFORD MASTER MFG. CO., INC.
(DEPT B) FAIRFIELD, ILLINOIS

OTHER  REPLACEMENT PARTS

DRAG LINKS

CLUTCH RELEASE BEARINGS

WATER PUMPS

WATER PUMP KITS

TIE ROD ENDS

FRONT WHEEL BEARINGS

PISTON PINS

**PREFERRED BY MASTER MECHANICS
THE WORLD OVER**

OTHER  REPLACEMENT PARTS

DRAG LINKS

CLUTCH RELEASE BEARINGS

WATER PUMPS

WATER PUMP KITS

TIE ROD ENDS

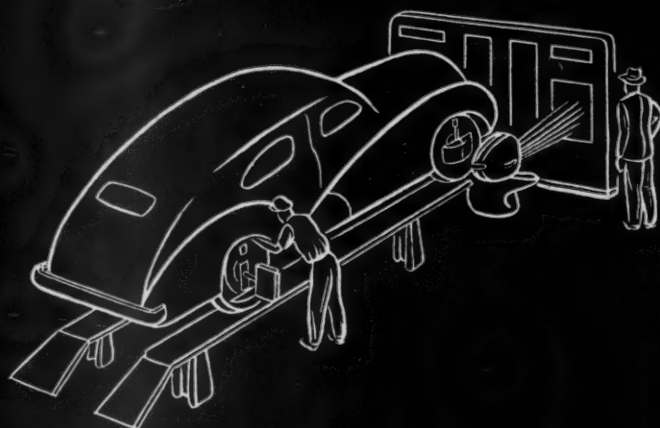
FRONT WHEEL BEARINGS

PISTON PINS

**PREFERRED BY MASTER MECHANICS
THE WORLD OVER**



**THIS CAR TRAVELS
LIKE A DOG!**



**NOW---YOU CAN PROVE IT TO YOUR
CUSTOMERS--ANOTHER VISUALINER EXTRA**

You can show your customers the exact alignment condition of their rear wheels as well as the front wheels with a Visualiner.

Its unique light ray system gives you unequalled accuracy and speed in checking and correcting ALL the usual alignment factors, plus many extra checks. With its extra services and its extra customer appeal . . . you are sure of extra profits. Ask your John Bean jobber or write for full information.

VISUALINER

John
BEAN

JOHN BEAN MFG. CO.

DIVISION OF FOOD MACHINERY CORP.

LANSING 4, MICHIGAN

WHEEL ALIGNERS and CORRECTION TOOLS
WHEEL BALANCERS and BALANCING TOOLS
WEIGHTS - STEAM CLEANERS - WASHERS

buy this
**complete
anti-freeze
protection**
for all-winter driving
satisfaction



Get all-winter satisfaction — complete relief from avoidable cooling system mishaps! "NO-FREEZE" NON-FREEZING COOLANT PERMANENT ANTI-FREEZE prevents freezing, the expert work of your service station will do the rest. "NO-FREEZE" retains its full strength all winter — does not evaporate — prevents rust and scale — and is guaranteed down to 35° below zero — TESTING at any time! Great Northern Research Laboratories, Inc., Chicago 5.

IMPORTANT

The cooling system is a vital part of your engine — it must be kept clean and tight against leaks. Read the "Cooling System Manual" on the back of the "NO-FREEZE" can and check with your service man to be sure your entire cooling system receives proper attention!



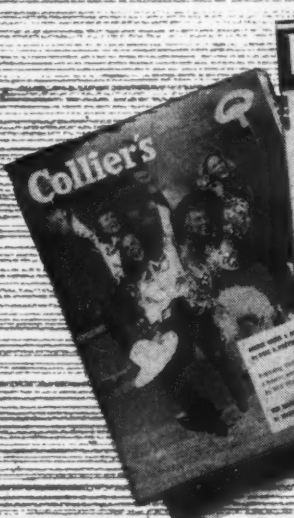
this year buy
**complete
anti-freeze
protection**



Get all-winter satisfaction — complete relief from avoidable cooling system mishaps! "NO-FREEZE" NON-FREEZING COOLANT PERMANENT ANTI-FREEZE will prevent freezing, and the expert work of your service station will do the rest. "NO-FREEZE" retains its full strength all winter — does not evaporate — prevents rust and scale — and is guaranteed down to 35° below zero — TESTING at any time! Great Northern Research Laboratories, Inc., Chicago 5.

IMPORTANT

The cooling system is a vital part of your engine — it must be kept clean and tight against leaks. Read the "Cooling System Manual" on the back of the "NO-FREEZE" can and check with your service man to be sure your entire cooling system receives proper attention!



"NO-FREEZE"

TRADE MARK REG. U. S. PAT. OFF.

**NON-FREEZING COOLANT
PERMANENT ANTI-FREEZE**

**advertising sells your
customers your complete
cooling system service**

Order Your

"NO-FREEZE"

TRADE MARK REG. U. S. PAT. OFF.

**NON-FREEZING COOLANT
PERMANENT ANTI-FREEZE**

from your jobber today!

- Guaranteed—will not freeze at 35° below
- No testing—will not boil off or evaporate
- Truly permanent—one fill lasts all winter
- Prevents rust—not merely "rust resistant"
- Will not harm cooling

system, car finish or person

- Can be drained, stored and re-used another season
- Complete merchandising program
- Nationally advertised to car owners

GREAT NORTHERN RESEARCH LABORATORIES, INC.

542 South Dearborn Street, Chicago, Illinois

Send details on the "NO-FREEZE" proposition

Name _____

Firm _____

Street Address _____ City _____

Our Jobber is _____

Advertisers Discuss Wholesalers' Problems

(Continued from page 58)

vertisers Council Award to Wholesalers for Most Meritorious Local Advertising" were decided upon at the meeting. This subject was presented by T. F. Hall, sales promotion manager, Walker Manufacturing Co. of Wisconsin, Racine, Wis. Purpose of the award is to encourage more and better local advertising

ing by wholesalers and give recognition to those who are doing an exceptionally good job. Mr. Hall stated that formal announcement of the award program will be made in the near future by the Council.

A progress report on Automotive Service Industries Show publicity, which is being handled by the Council, was presented by George Stout, R. E. Conley, advertising manager, R. M. Hollingshead Corp., Camden, N. J.; Carl Dietrich, sales promo-

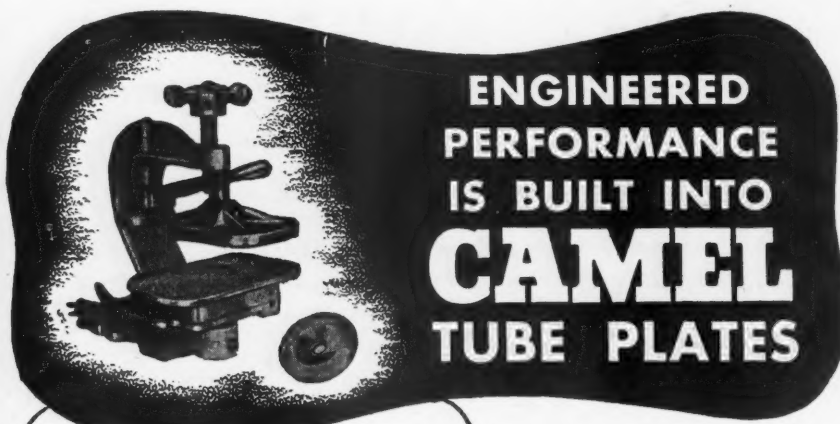
tion manager, Accurate Parts Mfg. Co., Cleveland, Ohio; C. H. LeFevre, advertising manager, Sealed Power Corp., Muskegon, Mich., and H. M. Wertz, advertising manager, The Toledo Steel Products Co., Toledo, Ohio.

N. J. Convention Sets New Record

At the recent New Jersey Automotive Trade Association convention 803 people registered, a new record. Officers elected were T. Irving Johnston, president; Courtenay S. Whitman, Jr., first vice-president; Harry D. Doerr, second vice-president; A. Gordon Swan, third vice-president; William L. Mallon, secretary.

Tri-State Dealers Meet at Atlantic City

At the Tri-State (Maryland, Delaware, Pennsylvania) Dealers convention held recently at Atlantic City, Claude S. Klugh, manager of the Pennsylvania Automotive Association, discussed at length on the Motor Vehicle Sales Finance Act and how it would directly and indirectly affect dealers. Klugh has seen the act grow from its infancy and has helped to shape it into a serviceable law in Pennsylvania, working closely with the State Legislature. Other speakers were M. O. Anderson, president of NADA; T. R. Reid, vice-president of McCormack & Co.; J. H. Fassitt, president of Foss-Hughes Co.; M. E. Coyle, executive vice-president of General Motors; and Elmer Wheeler, president of Tested Selling Institute.



A few of many CAMEL line leaders



Red Quick Cure Tube Gum made of natural rubber. Flows and cures evenly, making a strong, feather-edge patch. Compounded for long shelf aging.



Vulcanizing Cement—high quality, positive action, surer results. Ideal for making necessary tube and tire repairs.



Combination Tube Repair Gum — sometimes called "back-up rubber." Used either in making reinforced vulcanized repairs or as a cold patch.

SIMPLE CONSTRUCTION — STURDY, SPEEDY — and easy to use. Will operate 24 hours a day. 5x9" curing surface will handle all passenger car and truck valve stem repairs. Thermostatic control to 2° plus or minus. 5,000 lb. pressure, operates on AC 110 volts without special wiring. Operates 10 hours for about 8 cents. WRITE FOR DESCRIPTIVE FOLDER!



The complete CAMEL line: Vulcanizing Patches, Tube Repair Kits, Garage-size Kits, Inner Tubes, Quick Cure Tube Gum, Vulcanizing Cement, Red Boot Cement, Gasket Cement, Rubber Cement, Electric Tube Plates, Vulcanizing Clamps, Valve Stem Heat Units and Vulcanizing Kits.



"... and you don't think we're making it look too obvious?"

THERE'S STILL TIME TO WIN IN FRAM'S GREAT \$100,000 PRIZE CONTEST



YES, there's still time for you to win the \$500 dealer first prize—or one of the four \$100 prizes—or one of the 224 \$10 prizes—in Fram's great \$100,000 Prize Contest! So, if you aren't already in, see your jobber salesman and get in the contest now! And if you are trying to win, now's the time to turn on the heat! Contest closes November 10. The more customers you get to enter the contest and help with their entries, the better your own chances of winning a big prize!

But there's a whale of a lot more than prizes in this contest for you, because the contest is designed to bring you customers. Every customer means a chance to sell Fram Oil and Motor Cleaners and genuine Fram Replacement Cartridges. The contest has made millions of motorists filter-conscious. That gives you a swell chance to cash in!

So ask every motorist who drives in, "How's Your Oil Filter?" That's your opportunity to get under the hood and see. If oil shows dirty, install a complete Fram filter—or, if the car is already filter-equipped, sell a genuine Fram Replacement Cartridge for top filter performance. Fram Corporation, Providence 16, R. I. In Canada: J. C. Adams Co., Ltd., Toronto, Ontario.

FRAM OIL & MOTOR CLEANER

Cleans the Oil that Cleans the Motor

CONTEST CLOSES NOV. 10 EASY RULES • BIG DEALER PRIZES

How to Win: All you have to do is give your customers FREE Entry Blanks for the consumer contest, and help them with their entries. (See special broadside for contest rules.) Then, put your name on every Entry Blank and when one of your customers wins a prize, you win, too!

229 Prizes For Dealers!

First Prize, \$500.00.

Four Second Prizes, \$100.00 Each.

TWO HUNDRED AND TWENTY-FOUR Third Prizes, \$10.00 Each.

229 Prizes For Motorists!

Motorists get five Fram-equipped cars—a Lincoln Sedan, Studebaker Land Cruiser Sedan, Mercury Sedan, Ford Sedan, Crosley Sedan—just for stating in 25 words or less why they prefer to have their cars equipped with a famous Fram Oil and Motor Cleaner. Other prizes are 6 Philco Refrigerators, 6 Philco Freezers, 12 Philco Cabinet Radios, 25 Bulova Wrist Watches, 25 G-E Mixers, 25 Parker "51" Pen and Pencil Sets, 25 Ronson Table Lighters and ONE HUNDRED \$10 Bills!

*Get in the
Fram Contest Today!*

Texas to Have Big Track at Arlington Downs

(Continued from page 58)

nounce that Sunday, Oct. 26, has been sanctioned by the American Automobile Association as the date for an initial 100-mile championship race that will bring the top drivers and big racing cars of the nation to Arlington Downs and will officially decide the 1947 United States automobile racing champion.

The lease agreement was negotiated with Guy L. Waggoner and E. Paul Waggoner, Vernon, Texas, cattlemen who built and formerly operated the Downs as a horse racing plant when it was known as the "Saratoga of the Southwest." It has not been used for racing since 1937 when pari-mutuel betting was outlawed in Texas.

The new operators of the Downs said more than \$75,000 would be expended in improvements to the

track, buildings and other physical properties before the Oct. 26 race.

The announcement was made at a press gathering attended by the principals or their representatives, officials of the AAA Contest Board, and additionally by Wilbur Shaw, of Indianapolis, three-time winner of that city's 500-mile speed classic and now president of the Indianapolis Speedway Corporation.

Shaw assured the gathering that the Oct. 26 race will be run entirely with Indianapolis cars and drivers, including Ted Horn, defending national champion, and Bill Holland who now are in a tie for the 1947 national title. He added that the championship race will be started, timed and officiated by AAA officials.

Every Automotive Need One Source of Supply

Dependable
Quality

Hi-Power Mufflers
Universal Joints

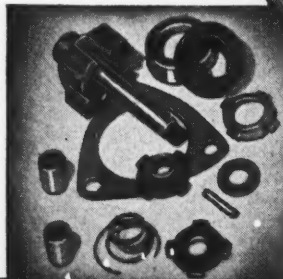
Spindle Bolt Sets

Coil Action Kits

Shackle Sets

WATER PUMPS & KITS

Easy installation!
Every part inter-
changeable with
original equipment.



LION AUTO PARTS AND MFG. CO.
1920 SOUTH MICHIGAN AVE. CHICAGO 16, ILLINOIS

Wisconsin ATA Elects

Judging from attendance records and enthusiasm of members and guests, the 1947 Wisconsin Automotive Trades Association convention will go down in history as being outstanding, not only for the interest in and coverage of subjects discussed by speakers but also the thorough enjoyment and participation in the many convention features.

Officers elected for the coming year and to take office on Nov. 1 are as follows: H. F. Warsinske, Wisconsin Rapids, President; A. C. Hall, Milwaukee, First Vice-President; J. P. Gillespie, Madison, Second Vice-President; Bryan Roberts, Burlington, Secretary-Treasurer; Louis Milan, Madison, Executive Vice-President.



"He ought to know by now whether it gathers moss or not."

Automotive Equipment Display Held in Memphis

(Continued from page 59)

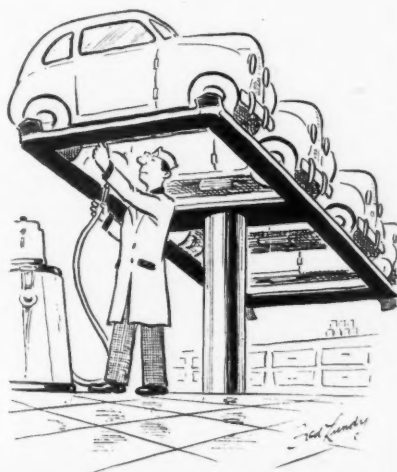
representatives were present to acquaint visitors with first hand information about the new post-war developments and the expectations for 1948.

Automotive shop operators, mechanics and service men saw actual demonstrations and learned about the new ways for efficiency and economical shop operation. Products of some of America's largest manufacturers, including every section of the nation, exhibited the accomplishments of America's greatest engineers.

The four-day display was sponsored by Mills-Morris Company, McGregor's, Inc., Ozburn-Abston & Co., Inc., and Sun Electric Corp., and the exhibit included equipment that was shown for the first time in this Mid-South territory.

With car dealers, garage and service station operators eager and anxious to attract new service customers to their establishments and with new car production still lagging and with more than 25,000,000 pre-war automobiles and trucks still on the roads, the sponsors of this four day display served the largest crowds ever to attend an Automotive Equipment Display in the Memphis area.

The Equipment Display committee included R. R. Meadows and Leo R. Jalenak of Mills-Morris Co., E. J. Verret of Ozburn-Abston & Co., J. M. Suggs and Sterling Cooper of McGregor's, Inc., and O. E. Scarbrough of Sun Electric Corp.



Now, Woven Plastic Covers at 1/2 Former Prices

... *You Really Cash In On This One* ...



THOSE gorgeous new candy stripes—in brilliant woven plastics—to retail at **LESS THAN HALF** former prices. It's the biggest seat cover smash-hit of the year, thanks to the revolutionary new Rankin plan:

1. Custom-fitted for all model cars.
2. Then **MASS PRODUCED** to these custom patterns, at **VOLUME** prices.
3. Sold exclusively to legitimate dealers (no chains, mail order, or cut-throat competition to bother you).
4. You can run circles around other outlets because of the really popular prices, smarter styling, finer fit and tailoring.

Every one wants smart, colorful woven plastic covers now, and here's the deal to give you volume profits on them.

Tear out coupon **TODAY** for our amazing profit proposition. It will open your eyes.

RANKIN
QUALITY...

The BIG new name in SEAT COVERS

RANKIN MANUFACTURING COMPANY, Dept. R, Cedar Falls, Iowa

**MAIL THIS
COUPON**

Rankin Mfg. Co., Dept. R, Cedar Falls, Iowa
Please send free literature on your better profit plan on seat covers.

Name

Address

Town State.....

O-23 Bear Low-Cost Wheel Alinement Unit

The Bear Manufacturing Company has designed a low-cost wheel alinement unit for the small repair shop and for the service station. Designated the No. 121, this unit operates in conjunction with any type of free wheel lift, it being necessary to raise the car high enough to place 25 in. standards under each wheel. When the lift is lowered to the floor, the car is left

standing safely on the concave tops of the standards, ready for alinement inspection. Turning radius plates are built into the front standards. The outfit includes necessary gages.

(For further information use coupon on p. 61)

Champion Appointments

Two important promotions have been announced by the Champion Spark Plug Company. O. C. (Jack) Leighty, of Philadelphia, has been

named Assistant Sales Manager with headquarters in Toledo, and G. E. (Jerry) Ledbetter of Boston, the successor to Mr. Leighty as District Sales Manager in New England, New York, Pennsylvania, New Jersey and Delaware.

Both men have long terms of service with Champion behind them, both starting as crewmen and working their way through the positions of fieldmen and territory representatives. Mr. Ledbetter, who served as a Lieutenant-Colonel and Director of Maintenance in the First Service Command, will have his headquarters in New York City.



...now's the time for BIG PROFITS with

WARNER

Pre-Winter Cooling System Service

Want real profits from cooling system service? Here's what to do: Sell anti-freeze early, before the first cold snap... at the same time clean radiators, repair leaks and prevent clogging with Warner Pre-Winter Cooling System Service. Don't wait until the last minute rush for anti-freeze... start now, while you can handle the business easily, properly and profitably!

Warner Radiator Cleaner—to thoroughly clean the cooling system of rust, corrosion, oil muck and grease.

Warner Cooling System Protector—to keep it clean and prevent rust and corrosion leading to overheating.

Warner Liquid Solder—to repair leaks by depositing tiny non-metallic fibers wherever leaks occur.

Standards of protection for more than 25 years.



NATIONALLY ADVERTISED

Warner's big pre-winter advertising campaign is now in full swing with ads appearing regularly before millions of readers in Collier's and Saturday Evening Post. Don't miss your chance to cash in on it.

Warner

A FAMOUS NAME IN AUTOMOBILE HISTORY

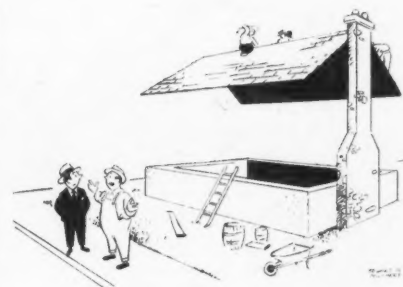
WARNER-PATTERSON COMPANY • 920 S. MICHIGAN AVENUE • CHICAGO 5, ILLINOIS

Motor Age Publishers Elect Vallar Treasurer

Joseph S. Hildreth, president of the Chilton Co., announced the election of William H. Vallar as treasurer and George Maiswinkle as assistant treasurer, at a meeting of the directors of the company on Sept. 26.

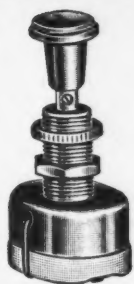
Mr. Vallar, who succeeds the late William A. Barber, has been associated with the company 41 years, starting as an office boy with the *Department Store Economist* on Sept. 4, 1906. Virtually his entire service with the company has been in the accounting department, the last several years as assistant treasurer.

Mr. Maiswinkle was first associated with the Maiswinkle Printing Co., owned by his father, and he worked with other printing and electrotyping firms before entering the public accounting business, where he specialized in printing and publishing accounts. He joined Chilton in 1943.



"The cement, stone and slate shingles are easy, but lumber I just can't get."

LYNN QUALITY SWITCHES

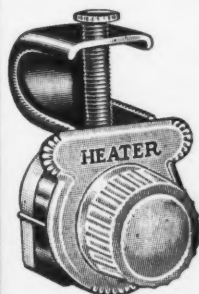


PUSH-PULL



GANG SWITCH—Illuminated Heater and Fog Light

HEATER SWITCHES!
FOG AND ROAD LIGHT SWITCHES!
ACCESSORY SWITCHES!



HEATER

There will be a tremendous demand for all types of Heater and Accessory Switches this Fall and Winter . . . don't wait until the last minute to place your orders . . . avoid shortages and disappointments. Anticipate your needs and order LYNN Switches from your Jobber VOW.

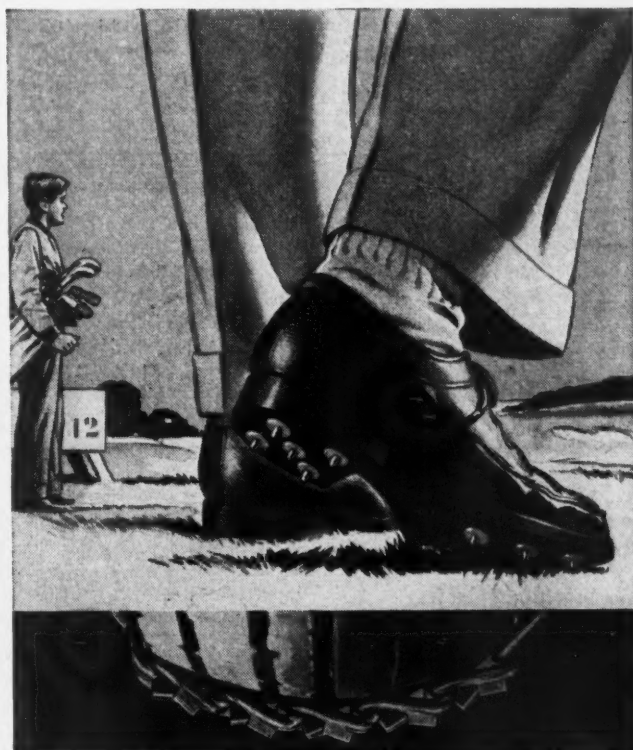
Write us for catalog sheet illustrating our complete line.

Export Dept.: VALYN EXPORT CO.
321 E. Ontario St., Chicago 11, U. S. A.

LYNN PRODUCTS COMPANY, Inc.
319 East Ontario Street, CHICAGO 11, ILL.

THE SPIKES DIG IN FOR BETTER TRACTION

Campbell Lug-Reinforced Tire Chains give better traction and longer life!



Like the spikes on the golfer's shoes, the exclusive, patented* saw-tooth lugs of Campbell Lug-Reinforced Chains dig right into ice and snow for the grip that means quick starts and safe stops—they put an end to dangerous slip and skid. The tough, long-wearing steel and one-piece construction mean increased mileage. For your profit—and your customers' safety—feature Campbell Lug-Reinforced Tire Chains. International Chain & Mfg. Company, York, Pennsylvania.

*U. S. Pat. No. 2,093,547—Canadian Pat. No. 223,568



MILEY BLACK GOLD

**Metallized
Brake Linings
are guaranteed
NOT to Score
Brake Drums**

L. J. MILEY COMPANY
18 S. SANGAMON, CHICAGO 7



O-23 Graph-Tex 303 Now Available In Pint Cans

Greenleaf Corporation's Graph-Tex is now available to jobbers, shops and service stations. On sale in pint cans, it is added to the oil or gasoline. In action, according to the manufacturer, it forms an additional lubricating surface on moving parts, soaking through carbon and gum and causing them to dissolve and dissipate. Composed of

natural flake graphite, it suspends itself in oil and will retain its lubricating qualities at temperatures up to 4,000 degrees.

(For further information use coupon on p. 61)

Olson Joins N.S.P.A. Staff

Further expansion of direct service facilities for members of the National Standard Parts Association has been made possible by the employment of Harold Olson as a



member of the executive staff. As a market analyst and statistician Mr. Olson will devote much of his time to business surveys and the preparation of sales territory studies for wholesalers.

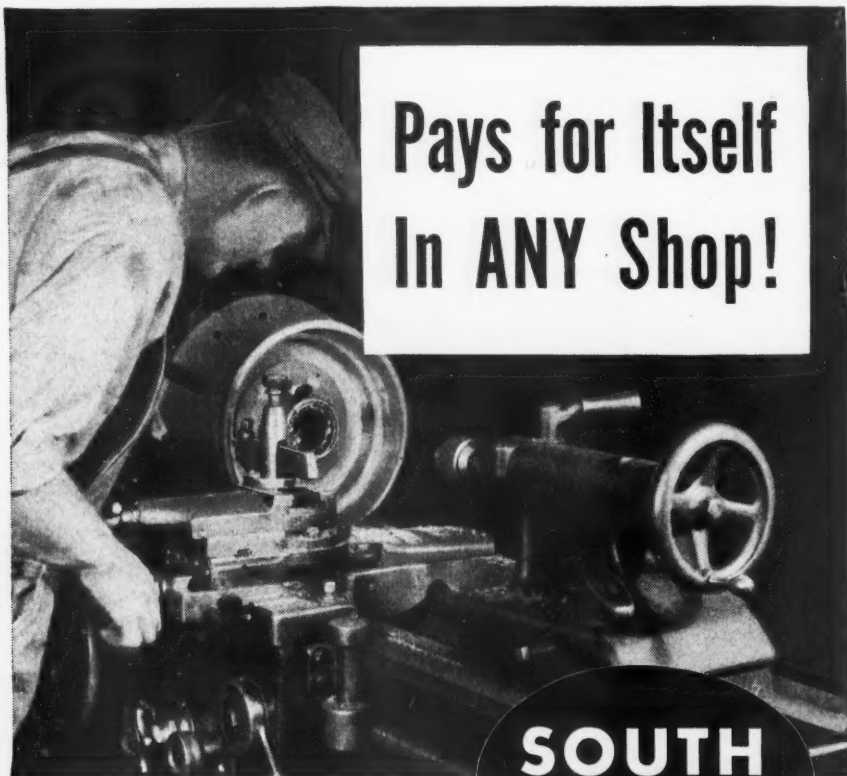
The new staff member is a graduate of the University of Illinois. He did market analysis work with the Lord and Thomas Advertising Agency until the army called him in the early part of 1941.

After four and a half years in the armed forces, where he worked from the ground up, infantry to air corps, he was discharged in the fall of 1945. Since that time he has been a member of the market research staff of the Foote, Cone & Belding Advertising Agency.

Market analysis service for individual member wholesalers was instituted by the Association in 1945. Its value was quickly recognized and the service has shown a constant growth in popularity. Sales territory survey reports include motor vehicle and farm tractor population figures. Estimated dollar volume figures for certain leading parts lines also are provided.

Kansas Dealers Complete Group Insurance Plan

Kansas Automobile Dealers Association has announced that the group insurance plan proved so successful that the plan went into effect as of Sept. 17, 1947, far ahead of the date considered possible. Member firms which have not yet joined the group plan may still do so by submitting satisfactory evidence of insurability.



Truing a brake drum in a South Bend 16" Lathe

Pays for Itself In ANY Shop!

SOUTH BEND

A South Bend Precision Lathe will pay for itself time and again in the automotive maintenance shop by helping to turn out more and better work in less time and at lower cost. The ability to perform reconditioning operations on pistons, valves, shafts, king pins, axles, brake drums, commutators, bushings, and scores of other parts right in your own shop, and to make new parts when needed, will speed maintenance jobs, get fleet units back on the road sooner, and result in more pay miles per unit per year. South Bend Precision Lathes are made with 9", 10", 13", 14½", and 16" swings. Write today for complete Catalog 100 which contains detailed specifications.

DISTRIBUTORS in principal cities are listed under "Machine Tools" in classified section of phone book.

PROMPT DELIVERIES from nearest distributor's stock or factory.

PRICES start at \$145.00, f.o.b. factory. Average increase less than 15% over prewar price level.

TIME PAYMENTS: 25% down, twelve months to pay balance. Moderate finance charge.

LATHE BUILDERS SINCE 1906

SOUTH BEND LATHE WORKS

450 E. Madison St., South Bend 22, Indiana



The only dependable, economical answer to top ring groove wear...

SEALED POWER GI-60

MAKES OLD PISTONS NEW — KEEPS NEW PISTONS YOUNG

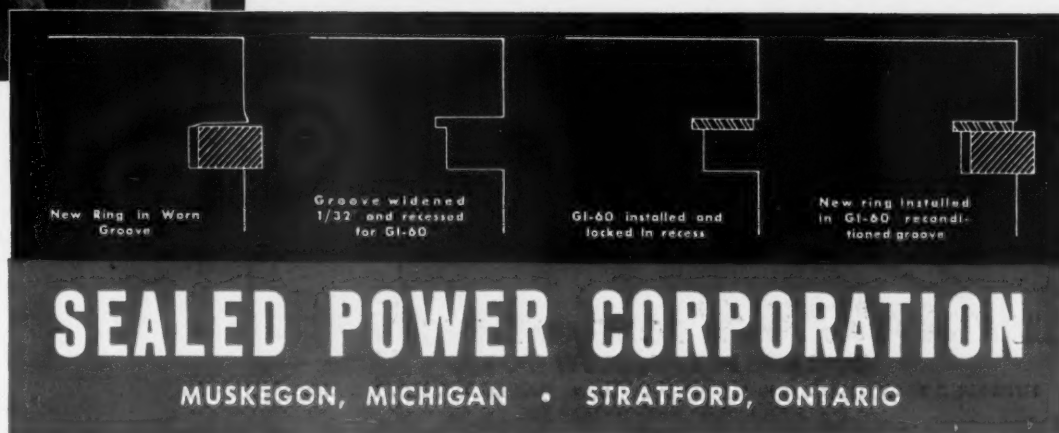


ALL good mechanics know that worn top ring grooves will put two strikes on the best piston rings ever made. A new ring installed in a worn top groove permits gases to blow by, causing short ring life, cylinder wear, and excessive gas waste. If you widen the groove and put in a wider ring, you are changing the original specifications of the engine manufacturer and inviting trouble. If you put in an ordinary spacer, you have merely put in a wider ring in two sections.

The new Sealed Power GI-60 Contracting Groove Insert is not a "spacer." It does not float, but is anchored securely at the top of the ring groove. Before the GI-60 is installed, the top groove is re-grooved to an absolutely true surface $\frac{1}{32}$ " wider than the original groove, with a $\frac{1}{32}$ " recess at the top. Into this recess the GI-60 Groove Insert is fitted, locking itself permanently in place, forming a heat-treated spring-steel shield that resists wear and pounding of the top land better than either aluminum or cast iron can resist it.

Your Sealed Power jobber is now equipped to furnish this service for you. It is the only dependable, economical answer to top ring groove wear. It is equally effective in worn or new replacement pistons. The cost is low and the benefits are great. Thorough field tests by commercial fleets have proved the efficiency and value of GI-60 beyond any doubt. Ask your jobber now for this new Sealed Power service.

**And when you need new pistons it will pay you
to specify Sealed Power Heavy Duty Pistons**



SEALED POWER CORPORATION

MUSKEGON, MICHIGAN • STRATFORD, ONTARIO





SOMETHING EXTRA IN BRAKE SERVICE, TOO PURITANIZE*

This is the season when your customers need that something extra in brake service—a *Puritanize job.

It's a wise service man who suggests flushing out gummy, dangerously dirty brake fluid and replacing with fresh at the end of the winter season. Wise on two counts—you are selling safety to your customer and you are adding a profitable extra to your sales.

Puritan Hydraulic Brake Flushing Fluid makes easy work of a Puritanize* job. It

acts quickly and efficiently, leaving the brake line clean and ready for long-lasting, non-gumming Puritan Hydraulic Brake Fluid.

It's better for you to suggest a *Puritanize job than to have your customer go to somebody else for the emergency service a Puritanize* job might have avoided. Be sure to keep an ample supply of Puritan Hydraulic Brake Flushing Fluid and Puritan Hydraulic Brake Fluid on hand. Get both from your NAPA jobber today.

*PURITANIZE... TO BRAKE SAFETY



1. Clean hydraulic brake line with fast-acting Puritan Hydraulic Brake Flushing Fluid.

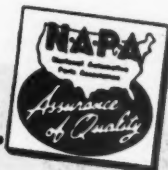


2. Refill with non-gumming, all-"miscible" Puritan Hydraulic Brake Fluid.



PURITAN COMPANY, INC.
ROCHESTER 6, NEW YORK

HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO. 1, 2 AND 3
SHOCK AND KNEE-ACTION OIL



Trucut Armature Tester

The Frank N. Wood Company has introduced the Trucut Armature Tester, for testing automotive armatures. Designated Model ATM, it is equipped with a pair of test prods, connected in a test light circuit for testing grounds. It is complete with meter and meter prods (double prod) to indicate open or short circuits. It operates on 115 volts, 60-cycle alternating current, it weighs 13 lbs.

(For further information use coupon on p. 61)

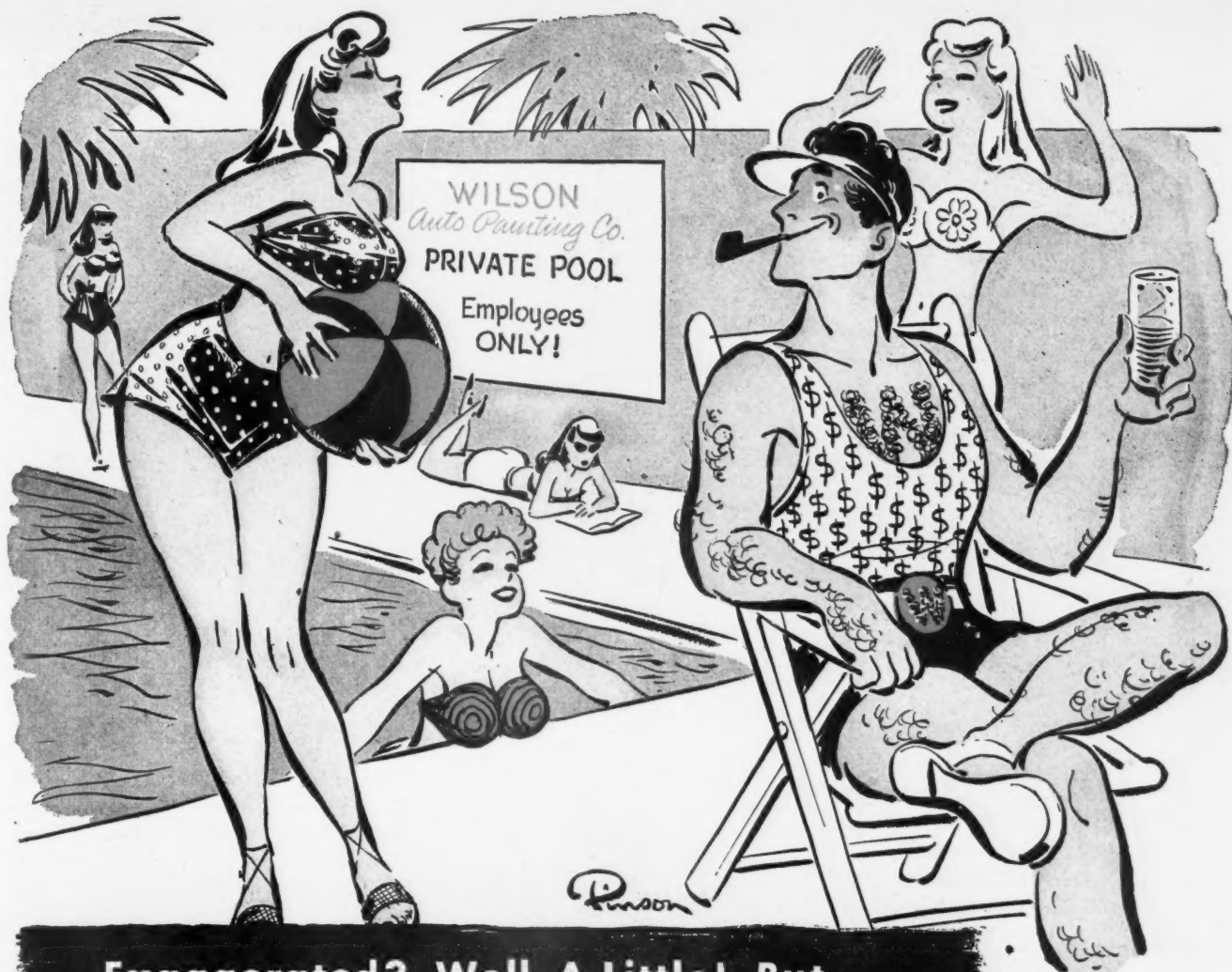
International Battery Appoints Ulrich

The appointment of J. E. "Ed" Ulrich as Vice-President, General Sales Manager and member, International Battery Corporation, Los Angeles, has been announced by Hugh Pollock, President of the company.

Ulrich comes to International from Hobbs Battery Company where he held a similar position and for 24 years was a key member of that organization. Well known throughout the West, Ulrich will direct the sales and also an aggressive advertising and merchandising program to help the dealers and distributors of International Batteries.

According to President Pollock the appointment of Ulrich represents an important step in International's rapidly expanding sales in the 11 Western states.





Exaggerated? Well, A Little! But . . .

... M-S HELPS YOU MAKE MUCH HIGHER PAINTING PROFITS

Eight Quick Reasons to Switch to Martin-Senour

- 1** Higher painting profits
- 2** Exact color match to car-maker's specifications
- 3** Top quality, top durability, top beauty
- 4** No time wasted mixing or matching
- 5** Patented pour-top can prevents waste
- 6** No come-backs, no headaches
- 7** Easier to handle . . . jobs out on time
- 8** Available everywhere . . . call your N.A. P.A. jobber



Don't take our cartoonist too seriously. Chances are you'll *never* buy a swimming pool from your profits on Martin-Senour's automotive finishes. But you *will* have more time and money to do the things you like. For every M-S finish exactly matches the car-maker's specifications. You don't waste time mixing and matching. And jobs turn out right first time. That means you paint more cars with less effort, that you get the most from expensive labor. To get exactly the right finish, simply check color, make and model in the handy M-S catalog and phone your nearby N.A.P.A. jobber. Soon we hope to supply M-S automotive finishes in unlimited quantities.

MARTIN-SENOUR

2520 Quarry Street, Chicago 8, Illinois

Champion Truck Drivers

(Continued from page 68)

the tractor-trailer event and had done all his driving in this type unit. However, because most of his driving "on the job" was in urban areas, under new ATA rules, he could not qualify in this class. He, therefore, switched to straight truck, although he had not been behind the wheel of one of these units in several years.

Globe-Union Announces Two New Factories

C. O. Wanvig, president of Globe-Union, Inc., has announced the acquisition of two new factories, which enlarges the national organization to 10 factories located in strategic points throughout the country.

"In order to take care of the growing demand for Globe batteries" said C. O. Wanvig, "additional plant capacity has been ac-

quired at Mineral Ridge, Ohio, and Oregon City, Ore."

"One new factory, having a 32,000 sq. ft. area, is located about 10 miles from Youngstown and will serve the productive region of eastern Ohio, western Pennsylvania and West Virginia. The other factory at Oregon City, which is 10 miles south of Portland, has an area of 26,000 sq. ft. and will serve Oregon, Washington and the adjoining mountain states."

It is expected that the production of each factory will reach over 1000 batteries daily, starting early in 1948. Additional employment for operation of these two units will be upwards of 200 men.

Other Globe-Union factories now in operation besides Milwaukee are at Atlanta, Boston, Cincinnati, Dallas, Los Angeles, Memphis and Philadelphia.



WITH *Johnson*

ADJUSTABLE TAPPETS

for FORD V-8's and MERCURYS (85-100 H. P.)

You can't go wrong when you install **JOHNSON** Adjustable Tappets for Fords! You make more profit and gain more satisfied customers.

Designed and produced by "Tappet Specialists," suppliers of tappets of all kinds to America's leading engine builders, these tappets are easily and quickly adjusted without fitting of valves — with cylinder heads in place. Special spanners, included with each set of tappets, leave both hands free for quicker, yet more accurate adjustments, and the **JOHNSON** self-locking screw maintains this exact setting for many miles of smooth, quiet, full powered engine performance.

CALL YOUR N.A.P.A. JOBBER TODAY

Johnson **PRODUCTS INC.**
MUSKEGON, MICHIGAN
"Tappets Are Our Business"

ASI Show Continues To Break All Records

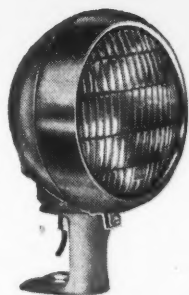
New records for both number of exhibitors and square feet of space have been set by this year's A.S.I. Show, it is reported by A. B. Coffman, Show Manager. "To date, there are 478 exhibitors who have contracted for better than 160,000 sq. ft. of space," he stated, "and the show promises to provide plenty of ammunition to help the industry carry out the show's slogan— 'Accelerate in '48.'"



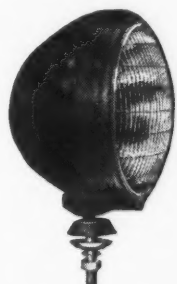
"Alfred, come out of there this minute and quit trying to steal the show."



If you like to
See where you're going...



FOG LIGHT
Model No.
A400A



**SEALED BEAM
HEADLIGHT**
Model No.
775-H



Eating carrots, doctors say, is one way to acquire better night-vision. An easier and better way, of course, is to let Arrow candle-power do the work. Arrow sealed-beam headlights and fog lights are among the finest and most efficient ever developed. They throw a wide, intense beam that illuminates every twist and turn of a road. Fair weather or foul, they give a driver the utmost in safety and driving comfort. Like all other dependable Arrow products—Arrow tail lights, directional signals, reflectors, mirrors, flares—they are well engineered, ruggedly built, designed to stand up under years of hard use. If you like to see where you're going and want to go on the profit side of the road, sell Arrow for greater *Safety After Dark*.

ARROW SAFETY DEVICE CO., MOUNT HOLLY, N. J.
SAFETY AFTER DARK

Connecticut Dealers Meet in Hartford

The speakers selected for the annual meeting of the Connecticut Automobile Dealers Association were M. O. Anderson, NADA president; Lyman W. Slack, chairman of the Inter-Industry Highway Safety Committee and Vice-President of Packard Motors; George Romney, director and general manager of the Automobile Manufacturers As-

sociation; and Governor James L. McConaughy of Connecticut. R. D. Gillmore, president of the Connecticut ADA, gave the annual business report.

The meeting was the first held under the new by-laws, changing the meeting date from December to October to avoid winter weather conditions and the press of the holidays. It was held at Hotel Bond and at the Foot Guard Hall. Over 1000 people attended.

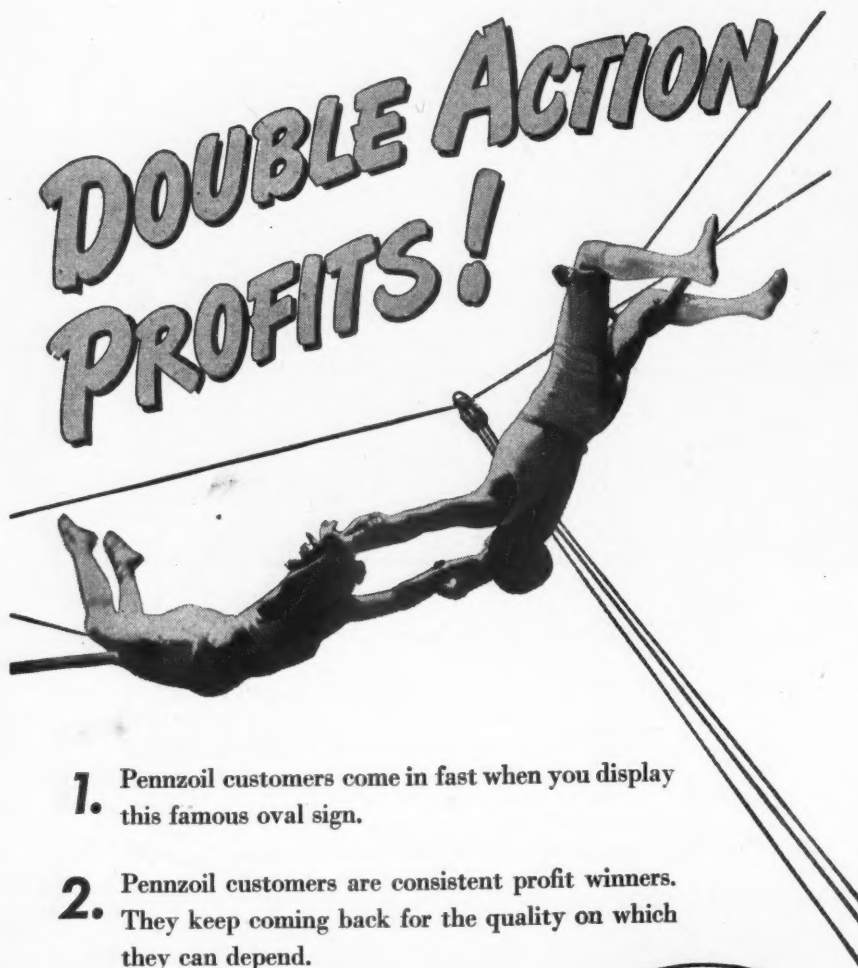
O-19 New Snow Gas Gage Gives Actual Mileage

A low-cost gage for installation in gasoline powered vehicles, manufactured by the Snow Plastics Corporation will, according to the maker, make possible a constant check on overall engine performance by indicating actual gasoline mileage under any driving conditions. The gage is connected to the windshield wiper system and is mounted on the windshield frame. No special tools are needed for installation. Models are now available for Ford, Chevrolet and Plymouth. Models for other makes of cars will be available in the near future.

(For further information use coupon on p. 61)

Alabama ADA Hears Mallon and Klugh

At the annual convention and election of officers of the Automobile Dealers Association of Alabama, the speakers, C. E. Anderson, executive vice-president of the association, announced recently, will include William L. Mallon, past president of NADA; William H. McGaughey of A.A.; Claude Klugh, executive vice-president of Pennsylvania ADA, and an expert on compulsory motor vehicle inspection bills, Jim Simpson and L. J. Buckland.



1. Pennzoil customers come in fast when you display this famous oval sign.
2. Pennzoil customers are consistent profit winners. They keep coming back for the quality on which they can depend.

This outstanding acceptance and performance record offers a great opportunity for you to increase your profits right now, during the winter change-over season. Find out about it from your Pennzoil distributor... or write to us for his name.



NEARLY 40 MILLION ADS A MONTH TELL MOTORISTS THIS IS THE SIGN OF BETTER DEALERS, COAST TO COAST.

THE PENNZOIL COMPANY • Executive Offices • OIL CITY, PA.

*Trade-mark Registered

Member Penn Grade Crude Oil Ass'n., Permit No. 2

PENNZOIL MOTOR OIL & LUBRICANTS



"Smithsonian would pay big money for some of the animals I have seen."

FAST TRANSFER OF HEAT....

Means no hot spots
to cause trouble

more
smooth power with....



LO-EX

PISTONS OF

ALCOA

FIRST IN

ALUMINUM



The Girl All America Knows

The people who don't know Hazel are few and far between. Every time she takes a bow, millions laugh.

And yet, the only place she ever appears is on the pages of The Saturday Evening Post.*

This gives you some idea of the vitality of The Saturday Evening Post and its impact upon America's millions—and how a fictional Post character can become an integral part of almost every family circle.

You'll see Hazel, as usual, in this week's Post.

**Think how much Post impact can do for the products you sell.*



"Certainly wonderful what they can do with rabbit!"



"Shall we play for a little something?"



"Like to change a couple of those bets—looks like a muddy track."



"You think Dempsey takes it lying down? He's back in the ring! Left Hook! Right Cross! Left Hook! Right Cross! Firpo is groggy!"



"She'll be back soon. Wanna come in and chew the fat?"



"Your formal came."



"Two men out. Last of the ninth. The ol' World Series stands at 3 all. UP STRIDES THE SULTAN OF SWAT!!"



"Nothing important today."



People pay attention
when they see it in the Post

O-20 Neapco U-Joint For Fords and Chevrolets

The New England Auto Products Corporation have announced modifications to their Split Ring Universal Joint. Increased torque capacity has been obtained by the use of heavier retainer rings, and hardened and ground bearings are being used for greater service life. Sizes are available for most Ford and Chevrolet cars.

(For further information use coupon on p. 61)

Ramco Launches Re-Powering Program

A nationally advertised Re-Powering Service for repair shops and car dealers which combines the selling of all four engine repair services into one program has been launched by the Ramsey Corporation, St. Louis, Mo., makers of Ramco 10-Up Piston Rings.

"The Ramco Re-Powering Program," states O. C. Holaday, sales manager, "is the culmination of

nearly a quarter century experience in the marketing and merchandising of piston rings. The new Re-Powering Program which has just been announced in the *Saturday Evening Post*, and in leading trade magazines, combines the successful elements of many of our previous programs, and adds one new important element... combination selling of all engine repair services. This element, we feel, is the key to a better way to sell engine overhaul service. It is an element which, while never before advertised nationally, has been thoroughly field-tested by pilot installations with hundreds of dealers throughout the country over the past five years.

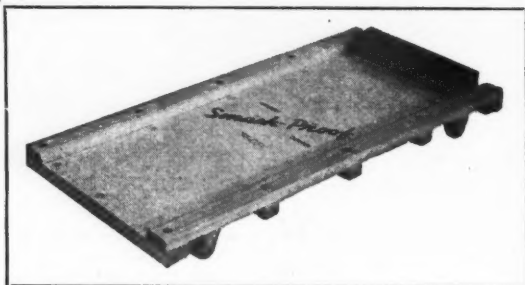
West Virginia ADA Features Speakers

West Virginia Automobile Dealers Association is scheduled to meet at Hotel Pritchard in Huntington the end of this month. Bill Randolph, manager of the association, has released acceptances from nine speakers. They are John W. Darr, president of the Institute of Public Relations; M. R. Darlington, manager-director of the Inter-Industry Highway Safety Committee; Jim Dalton, editor of *Motor*; Arthur J. Morris, president of the American Installment Credit Corp.; John O. Munn, dealer editor of *Automotive News*; D. C. Barnhart of NADA; Karl M. Richards, manager of the field service department of AMA; John W. Stokes, tax specialist; and William B. Burruss, sales consultant.

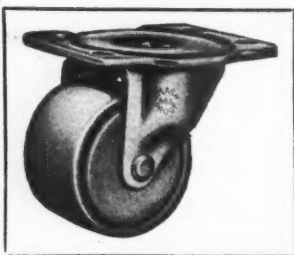
BEWARE of IMITATIONS!

LOOK FOR THE TRADEMARK WHEN YOU WANT THOSE GENUINE

Smash-Proof CREEPERS



AND
No. 888 CREEPER CASTERS!



DISTRIBUTED
EXCLUSIVELY
THROUGH
AUTOMOTIVE
JOBBERs

HULBERT MANUFACTURING CO.

ASHTABULA, OHIO





One of the most reliable parts of an engine is the AC Fuel Pump, heart of the fuel system. That's because it's *first quality* in design, material, and manufacture,—built to meet the engine maker's own requirements.

Serve your customers best, and protect your own reputation, by replacing worn pumps with new or factory-rebuilt AC's, and making repairs with authentic AC Parts Kits or Diaphragm Kits.

QUALITY FEATURES

- Careful control of pressure and flow assuring correct fuel supply.
- Accurate hardening, precision machining of parts essential to long life.
- Accurate control of spring tensions and temper.
- High, and controlled, pin hardness.
- 4-layer, patented-impregnation diaphragms of special airplane cloth.
- Carefully finished rocker arm pads, located to center on cam.
- Split-hair rocker arm clearance and control of pad hardness.
- Uniform pull rod hardness at pin holes.

SEND FOR AN AC PUMP SHOP MANUAL

Field Service Department, AC Spark Plug Division, G. M. Corp.
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop

Manuals checked:

- | | |
|--|--|
| <input type="checkbox"/> How to Service Spark Plugs | <input type="checkbox"/> HOW TO SERVICE FUEL PUMPS |
| <input type="checkbox"/> How to Service Spark Plug Cleaner | <input type="checkbox"/> How to Service Air Cleaners |
| <input type="checkbox"/> How to Service Oil Filters | <input type="checkbox"/> How to Service Speedometers |
| <input type="checkbox"/> How to Service Ammeters and other Instruments | MA-10 |

NAME _____

FIRM _____

STREET ADDRESS _____

CITY _____

STATE _____

Named to AAC Trade Paper Committee

Automotive Advertisers Council has announced the addition of Herman Teetor, advertising manager, The Perfect Circle Company, to its trade paper relations committee. The committee is headed by Burt Hotvedt, Blackhawk Mfg. Co. Other members are D. L. Hague, E. I. du Pont, and J. F. Apsey, Jr., Black & Decker Mfg. Co.

Victor Acquires New Building in Chicago

The Victor Mfg. & Gasket Co. has acquired an additional building at 3636 Iron Street, Chicago, to be occupied Sept. 1 for the storage, assembly, packaging, shipping, and merchandising of Victor's 90,000 items.

The five-story structure has floor space of approximately 200,000 square feet, or the equivalent of

4¼ acres. It has railroad tracks on two sides, and six platform openings for trucks to speed up the actual shipping. With this expansion, Victor is working toward a goal of having all orders in transit within one day after receipt.

By moving the storage and shipping operations, the company will now be able to devote all of the original plant, at 5750 W. Roosevelt Road, Chicago, to manufacturing.

O-21 Dupont Upholstery Fabric Catalogue

A new illustrated booklet describing various types of coated fabrics engineered for upholstery uses has been issued by the Fabrics Division of E. I. du Pont de Nemours and Co.

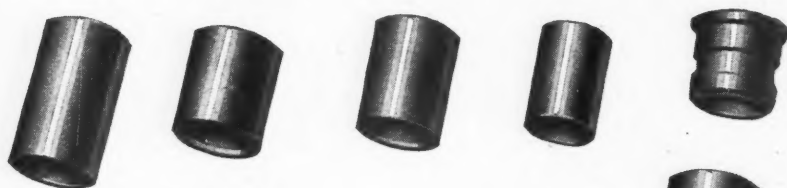
A wide range of coated fabrics are described, including "Fabrikoid," pyroxylin coated fabrics; "Fabrylite" vinyl plastic coated fabrics; and "Cavalon" synthetic rubber coated fabrics, for use in trucks and buses.

(For further information use coupon on p. 61)

Anti-Diversion Amendment Placed On Ohio Ballot

The Ohio Committee for Better Roads and Streets has been successful in their campaign to gather enough signatures to place upon the ballot this November a Constitutional Amendment against any diversion of automobile use taxes from the streets and highways of the state.

Starter and Generator BEARINGS



from stock

Immediate delivery from stock is now possible on Johnson Bronze Starter and Generator Bearings for all popular makes of cars, trucks and buses. The same is true of related parts such as water pump, steering knuckle, clutch pilot, propeller shaft, spindle and spring bushings. And every item in the line is the same, genuine top quality . . . identical in precision and finish with original equipment. There are no second or third grades of Johnson Bronze merchandise.

Twenty strategically located warehouses are ready to serve you. Why not check over your needs now? Then send in your order. Let us prove our excellent service. The bearings will prove their quality through performance.



New Catalogue

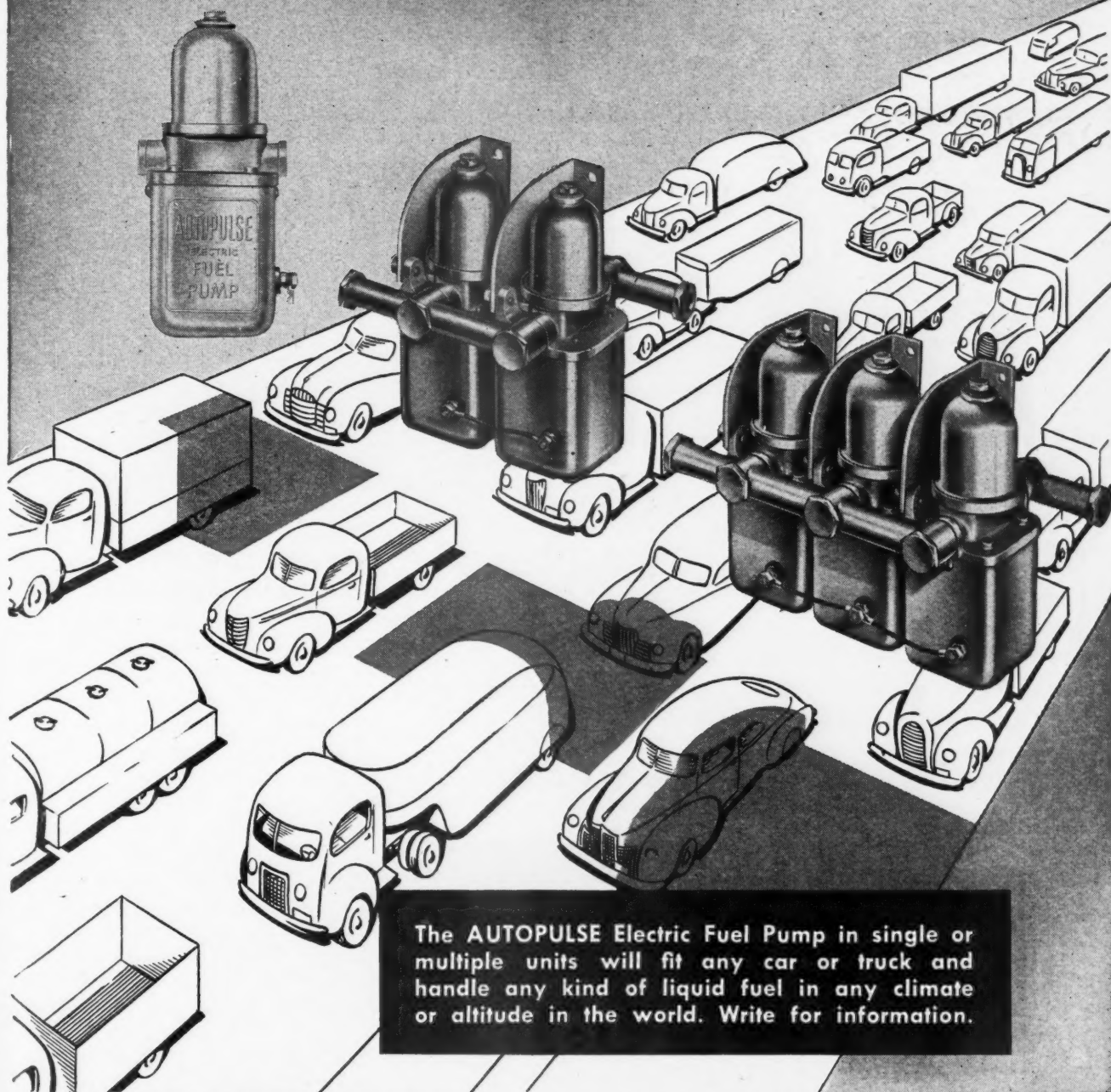
Lists and describes a complete bearing service for all cars and trucks. It's FREE.

JOHNSON THE MOST COMPLETE SLEEVE BEARING SERVICE IN THE WORLD **BRONZE**
SLEEVE BEARING HEADQUARTERS
455 S. MILL STREET NEW CASTLE, PA.



"Looks like Harry got up on the wrong side of the bed this morning."

MAKES NO DIFFERENCE
WHAT CAR OR TRUCK YOU
HAVE—HERE'S YOUR FUEL PUMP...



The AUTOPULSE Electric Fuel Pump in single or multiple units will fit any car or truck and handle any kind of liquid fuel in any climate or altitude in the world. Write for information.

AUTOPULSE Corporation

LUDINGTON, MICHIGAN • U.S.A.

To Keep the Business KEEP THE BUSINESS CLEAN

with



GREAS-OFF



HARCO GREAS-OFF is a scientifically processed and compounded solvent perfected by years of experience. It is highly concentrated. The concentrate is always diluted with at least eight parts of kerosene, petroleum or fuel oil. The application of water produces a rich creamy emulsion (oil in water type) which instantly removes all foreign matter. Will not clog drains. Prevents fire hazard by dispersion of kerosene or other oils in the water—is non-toxic and non-explosive. GREAS-OFF does in one operation the work which requires three or more processes with soap, powders and rubbing compounds.

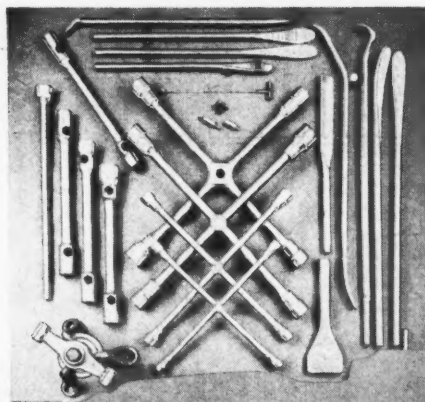
Contact your supplier or write us direct for further details of the HARCO Line.

Also makers of **HARCO**
CARBOSOLVE • DRIVEWAY CLEANER • CAR WASH
GREEN BAR SOAP

HARLEY SOAP COMPANY

Philadelphia 37, Pa.

KEEP THE BUSINESS CLEAN



KEN-TOOLS
DESIGN
LATEST
QUALITY
UNQUESTIONED
SEE YOUR LOCAL
JOBBER
KEN-TOOL MFG. CO.
AKRON 5, OHIO

LARGEST EXCLUSIVE MFG'RS OF SPECIALIZED WHEEL AND TIRE CHANGING TOOLS KNOWN AND USED AROUND THE WORLD

Buy
Bonds

Porte Plans Addition

Joseph L. Porte, president of the Porte Mfg. Co. has announced plans for the erection of an extension of his present plant. This new building will provide greater facilities to meet demands for the Porte line of automotive chemicals. The extension will give added space for the production of forthcoming new chemical lines and research work will now be intensified with an expanded department devoted solely to new developments and technological advancements.

Mr. Porte also announced his intention of continuing his all around advertising and merchandising campaign. Window streamers, point-of-sale displays, ad mats, blotters, envelope stuffers and other sales helps are now in preparation, and a revised and thoroughly detailed catalog will come off the press shortly.

For a copy of the new catalog, write the Porte Mfg. Co. at 3179 Atlantic Ave., Brooklyn, N. Y.

Kaiser-Frazer Mill Augments Steel Stock

Kaiser-Frazer has acted to increase its sheet steel supply by purchasing the Chapman-Price Steel Co. of Indianapolis, a subsidiary of Continental Steel Corp. K-F will take over the rolling mill, with a capacity of 55,000 tons annually, Oct. 1. The company has a contract with Continental Steel to furnish sheet stock requirements to the mill. It has been known for some time that shipments from the Portsmouth Steel mill in which K-F has an interest, has not been adequate to meet the demands of expanding production. The new mill is expected to supply about 20 per cent of current needs. The steel will be used for floor pans and reenforcing body members. Acquisition of the mill is another step in K-F policy of acquiring supplier sources to overcome shortages and to build up supplies for expected ultimate peak production of 2,000 cars daily.



**HANSEN
JET OILER**



**HANSEN AIR
HOSE COUPLING**



**HANSEN SAND
BLAST CLEANER**

HANSEN

AUTOMOTIVE *Air Line Equipment*

The reason so many service stations, dealers, and garages use Hansen Airline Equipment is that they know from years of experience that it is exactly what they need to do the job—and do it right.

Since 1920, Hansen smaller automotive equipment has been carefully designed and sturdily constructed to help you give thoroughly dependable service—even under the most trying conditions.

Write for Hansen Automotive Catalog which contains full descriptions of Hansen Air Hose Couplings, Hose Stems, Sand Blast Cleaners, Jet Oilers, Engine Cleaners and other items to help you give top-notch service.

HANSEN JET OILER is manually operated and shoots a jet of light or penetrating oil in any direction with ease. One quart capacity. Automatic cleaner prevents nozzle from clogging.

HANSEN COUPLINGS have won fame for their fast, positive action and amazing ease of operation. Air tight fit. Complete swivel action prevents hose from kinking.

HANSEN SAND BLAST CLEANER removes old paint, rust, or carbon, and prepares surface for welding and soldering. High or low pressure operation, depending upon the application.

REPRESENTATIVES

New England States: A. D. GEIGER, Belmont, Mass.	Indiana, Wisconsin: NEFF ENGRG. CO., Ft. Wayne, Ind.
Eastern, Southern States: B-R ENGRG. CO., Baltimore, Md.	Central Western States: JOHN HENRY FOSTER CO., St. Louis, Mo., Minneapolis, Minn.
Northern Ohio: F. & W. URSEM CO., Cleveland, O.	Western, Southwestern States: BURKLYN CO., Los Angeles, Calif.
Southern Ohio, West Va., Ky.: STEINHAUSEN AIRLINE PRODUCTS, Dayton, O.	Northern Calif., Nevada: H. E. LINNEY CO., Oakland, Calif.
Northern Ill., Eastern Iowa: NORRIS ENGRG. CO., Chicago, Ill.	Michigan: WM. H. NASH CO., Detroit, Mich.

THE HANSEN MANUFACTURING COMPANY

1786 EAST 27th STREET • CLEVELAND 14, OHIO

CHEVROLET TRUCKS SERVE, OLDEST CHEVROLET TRUCK FOUND!

1918 Model—One of the First 384 Built— Lasts Through the Years to Win National Contest

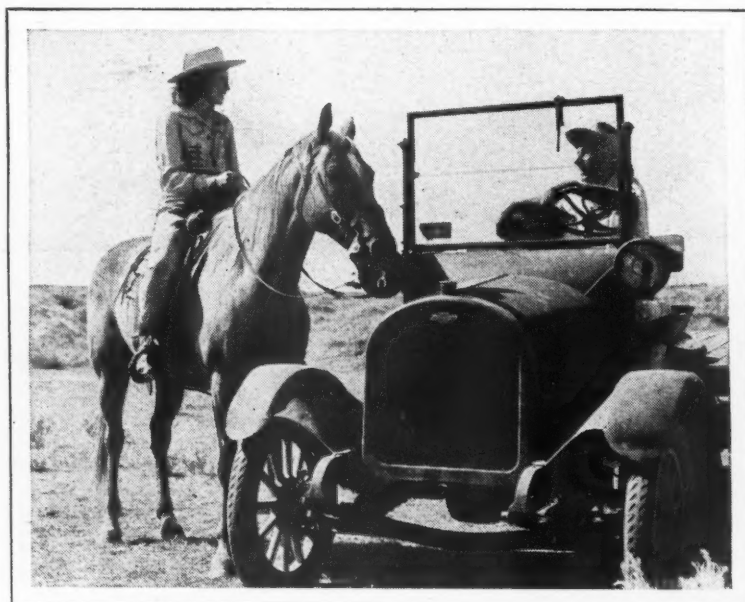
In one of the most widely publicized contests ever staged, Chevrolet dealers across America covered the highways and byways of the nation in search of the oldest licensed and operating Chevrolet truck in the country.

Taking up the hunt in typical aggressive fashion, dealers made a nationwide "round-up" of venerable Chevrolet trucks, all of them, despite their years, still at work, still serving America, still performing faithfully for a group of owners who know what is meant by Chevrolet *long life and dependability*.

In the closing days of the six-week contest, with nearly 6,000 ancient Chevrolet trucks registered, rancher Leslie A. Storey, of Jordan, Montana, entered what proved to be the grand winner—a 1918 model, built during the first year of Chevrolet truck history, when but 384 units were produced!

America's oldest Chevrolet truck, with its unmatched record of survival, is a "living" tribute to product quality and the lasting value of the Chevrolet franchise to dealers throughout the nation.

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN



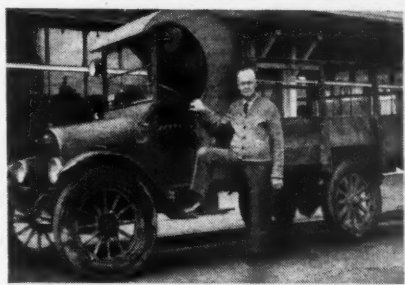
← TWO DEPENDABLE FORMS of transportation are compared here as Leslie Storey, winner of Chevrolet's "old truck" hunt, chats with Montana Cowgirl Merle Spears.

→ RANCHER LESLIE STOREY, Jordan, Mont., here "brands" his new Advance-Design Chevrolet truck, presented to him by Chevrolet in exchange for his contest-winning 1918 model. Looking on are Mrs. Storey and Montana Cowgirl Merle Spears.



SAVE . . . AND SURVIVE!

ACROSS THE NATION, OLD-TIME CHEVROLET TRUCKS STILL SERVE AMERICA
6,000 Old-Time Highway Veterans
Entered in Nationwide Search



TACOMA, WASH. In use nearly every day since 1919, this old-timer works faithfully for a veteran of the general hauling business, H. M. Waters.



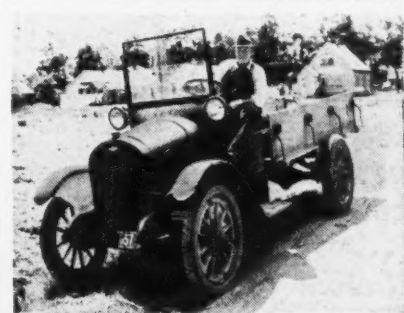
MODESTO, CALIF. Original motor, transmission and differential keep Mike Lonero's 1919 model at work hauling grapes, peaches, apricots.



MINOT, N. D. Originally purchased for use in the garage and farm implement business, this 1919 model owned by Harry E. Wosick now works on the farm.



WAUPACA, WIS. M. G. Pope hauls farm products in his 1919 Chevrolet, which he praises for fine performance and low operating cost.



BENTON HARBOR, MICH. Owner of a large fruit farm with its own packing and grading plant, William Zech entered his 1919 model in the contest.



CUMBERLAND GAP, TENN. Mountain highways are no trick at all for this old-timer, a 1919 model owned by Arthur Whitaker.



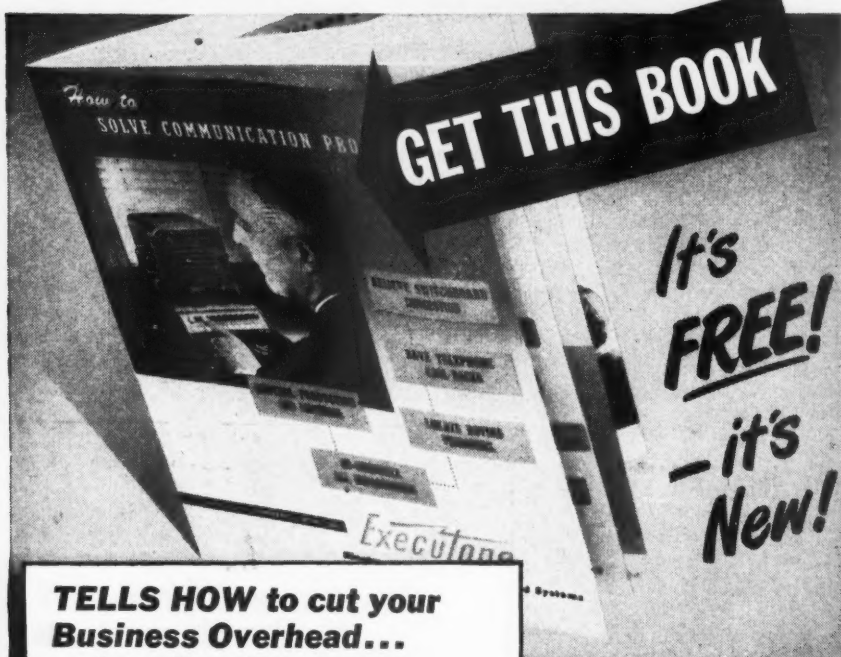
Going Forward Together



You and

CHEVROLET

Costs up? Profits down?



**TELLS HOW to cut your
Business Overhead...
reduce Non-Productive
Time...control Labor Costs
...get more work done!**

ARE YOU DISTURBED by the way your operating expenses have increased? Would you like to cut down on some of the dozen-and-one wastes that add up to non-productive time and eat into your profits?

Then get this brand new information-packed booklet, put out by the makers of EXECUTONE, entitled "How To Solve Communication Problems". It's FREE! Takes four minutes to read. And it may be the answer to your present business problem.

This booklet deals in a straightforward, realistic way with many of the day-to-day wastes that go on within the average business organization. It tells how these various leaks can be plugged... how switchboard congestion can be relieved... how time, money and manpower can be saved... by EXECUTONE, the modern electronic inter-com.

Send for this booklet today. Or, let us show you EXECUTONE right in your own office. Fill out the coupon and attach it to your letterhead.

Executone

COMMUNICATION & SOUND SYSTEMS

Mail Coupon TODAY!

EXECUTONE, INC., Dept. K-10
415 Lexington Ave., New York 17, N. Y.

Without obligation, please let me have—

- ☐ New booklet, "How to Solve Communication Problems"
☐ A look at EXECUTONE in my office

Name
Firm
Address City



Ford Program Trains Personnel as Executives

Ford Motor Co. is instituting a broad training program to fit promising managerial employees for promotion to company executive positions. In cooperation with Wayne University, present employees holding supervisory positions get practical on-the-job training in connection with classroom work and also have an opportunity to get a degree in industrial management in the University School of Business Administration. The program is planned to cover a period of five years involving various assignments to give students basic knowledge in the required skills of manufacturing activities supplemented by the necessary classroom theory. Classes include personnel management, effective speech, English, conference leadership, finance, industrial organization, personnel safety administration, factory planning and layout, production design, modernization and time study, tools and machines, materials handling, economics, mathematics, statistics, production controls, quality control by statistical methods, production reports, accounting, job analysis and evaluation, manufacturing cost accounting, industrial purchasing, and marketing and distribution. In addition, students working for a B.S. degree would take required courses and electives normally necessary for minimum degree requirements.

Factory assignments during the course period are: one year as assistant to job foreman and assistant to division foreman or supervisor of staff functions; six months each in cost control and methods engineering; three months each in scheduling and distribution, quality control, materials control, and tool control; six months assistant to general foreman; nine months assistant to superintendent; and six and a half months on specific production problems. Upon successful completion of the five year program, graduates will be assigned to work for which they are best qualified.

Full-Range Brake Control

... with Raybestos!



● Always before, brake lining has been sold to stop, and only to stop. But now we know that 6 out of 7 brake applications are *slow-downs*—6 slow-downs to every stop.

And now you have the edge over all competition—you can get the business that's passing other dealers by. With Raybestos, you give *full-range* brake control—Raybestos' seven different kinds of brake lining are engineered for easy, positive slow-downs as well as quick, smooth stops.

On top of that, you have the biggest reline market in history driving by your door. A recent nationwide survey, by MoToR, shows that *five out of every ten cars* need relines and the car-owners don't even know it—that \$400,000,000 in brake business is available to dealers who'll take the trouble to pull-a-wheel for every customer.

This is your big chance, and here's your key to profit: Check brakes on every car that comes in . . . sell full-range brake control . . . reline with Raybestos. The Raybestos Division of Raybestos-Manhattan, Inc., Bridgeport, Conn.

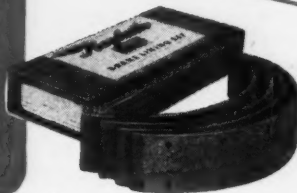
CHECK BRAKES
RELIN WITH



Raybestos

AMERICA'S BIGGEST SELLING BRAKE LINING
RAYBESTOS-MANHATTAN, INC.

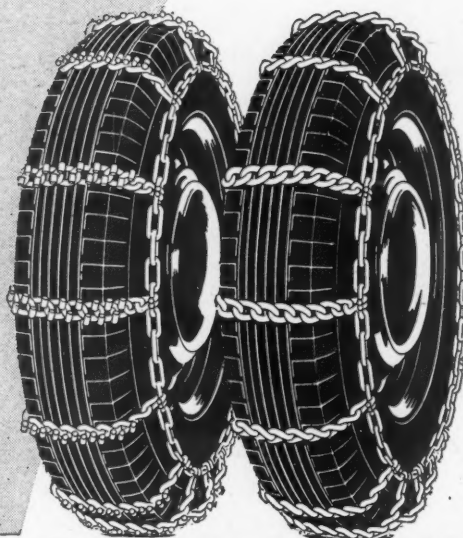
**NEW! Raybestos Ray-BOND
Sets Available Now**
Raybestos is ready with new
undrilled sets in correct combi-
nation, for use with bonding
equipment.



PG PROVING GROUND TESTED BRAKE LINING • BRAKE BLOCKS • CLUTCH FACINGS • FAN BELTS • HOSE for Cars, Trucks, Buses and Tractors

*HOOT MON!
They're Money Makers!*

McKAY TIRE CHAINS



McKAY
MULTI-GRIP

McKAY
REGULAR

TWO FAST SELLING CHAINS

It pays to handle fast selling, profitable McKay Tire Chains and Tire Chain Accessories. Backed by a quality reputation and extensive promotion, McKay Tire Chains are proven winners.

THIS DISPLAY KIT HELPS YOU SELL!

1. MAMMOTH BANNER
2. WINDOW POSTERS
3. SELLING TIPS
4. QUICK SELECTION, SIZE AND PRICE CARD

REQUEST THESE HELPFUL SALES TOOLS FROM YOUR McKAY JOBBER.

THE McKAY COMPANY
PITTSBURGH 22, PA.

WELDING ELECTRODES . . . COMMERCIAL CHAINS . . . TIRE CHAINS

462 McKAY BUILDING • PITTSBURGH 22, PA.

Automotive Financing Due to Rise

Ending of installment credit controls on October 31 or earlier is expected to lead to a considerable increase in the number of automobile purchase installment contracts. Total credit outstanding on automobile purchases at the end of June accounted for no more than \$862 million out of a total of almost \$11 billion. At the end of 1941, when consumer credits stood at approximately \$10 billion, automobile installment buying amounted to nearly \$2 billion. In the dying hours of the last congressional session, action was taken to eliminate all installment credit controls next October 31. However, there is some belief that President Truman may lift the credit controls by executive order before that time. It is believed, however, that most finance companies and lending agencies will alter existing credit regulations very little, at least as long as the present sellers' market exists. It is thought that most will ask 1/3 down but will extend to 24 months the time allowed for payment of the balance on new cars.

Willard Sales Force Meets in Cleveland

Willard Storage Battery Co. sales representatives from various sections of the country recently completed an intensive three-week study of all phases of the battery business at the large Willard plant in Cleveland.

Under the leadership of L. G. DeMotte, assistant sales manager, the group studied Willard production, research, service and merchandising. Here a number of the men look on as E. A. Schlund, Willard laboratory technician, demonstrates a high rate discharge test to check battery capacity. Left to right they are: Robert Pfeleger, Cleveland; J. L. Beckham, Atlanta; M. R. Lynn, Medford, Mass.; E. A. Schlund; R. A. Lees, Toronto, Canada; Robert Lansberg, Cleveland; Robert Lett, La Grange, Ill.

Keep Engine Temperatures in the **EFFICIENCY RANGE**



Replace with
**HARRISON
THERMOSTATS**

Harrison thermostats speed the warm-up period—maintain engine temperatures within the "efficiency range" for reduced wear, better performance.

Keep an eye out for worn-out or inoperative thermostats in your customers' cars. Replace with Harrison thermostats—the original-equipment thermostats in leading makes of cars, trucks and buses.



**HARRISON THERMOSTATS
A UNITED MOTORS LINE**
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Car owners appreciate the accurate, dependable performance of Harrison thermostats. They build goodwill through better service.

HARRISON

HARRISON RADIATOR DIVISION
GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK

Performance goes up in smoke....

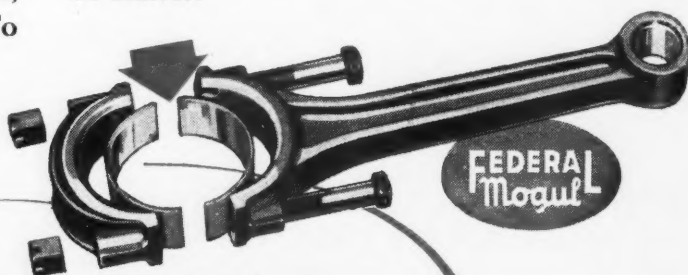
**when worn
connecting rod bearings
cause oil pumping**



Worn engine bearings, losing their metering control of oil flow, let excess oil burn to motor-fouling, performance-stealing carbon. One badly worn bearing, by "oil starving" the others, can cause costly crankshaft damage. To

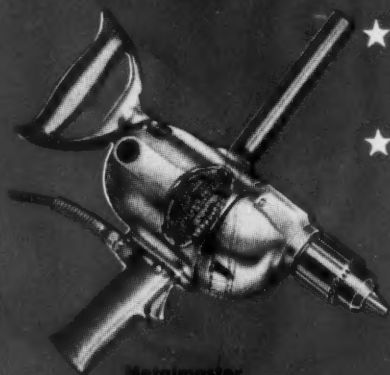
correct oil pumping, and to restore engine power, pep and operating economy—replace worn bearings with genuine Federal-Mogul bearings, *engineered for the job of oil control!*

FEDERAL-MOGUL SERVICE
DIVISION OF FEDERAL-MOGUL CORPORATION
COLDWATER, MICHIGAN



**Replace in Sets with Genuine
FEDERAL-MOGUL
Oil-Control Bearings**

Shops that are Better Equipped are **BRADFORD** Equipped



Metalmaster
1/2" SPECIAL DUTY DRILL

Model 49—Light, super-powerful. All ball bearing. Jacobs Chuck. Detachable pipe and swivel spade handles. Ground chuck spindle threads. Weight 10 1/4 lbs. 110 or 220 volts AC/DC. (Other Metalmaster Drills from 1/4" Standard to 1" Heavy Duty).

- ★ **SAVE MAINTENANCE
MAN HOURS**
- ★ **INCREASE SHOP EFFICIENCY**

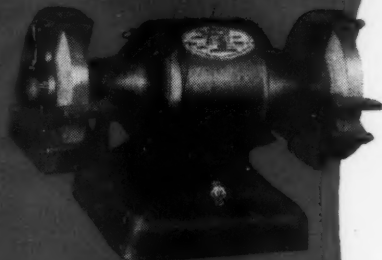
with

BRADFORD PRECISION TOOLS



Admiral
COMBINATION GRINDER-BUFFER

Model GB—Heavy Duty. Serves variety of shop needs. Two ball bearing type. Chrome nickel steel spindle. Motor, totally enclosed, 220/440, 550 volts, 50-60 cycle, 2 or 3 phase. Also available in 1 HP single phase.



Metalmaster BENCH GRINDERS

3 Models: 1/2 to 1/2 HP. All ball bearings in dust-proof housings. Adjustable guards and tool rests. Extra wide guard models for buffing.



**Metalmaster "KOOL GRIP" DISC
SANDERS and POLISHERS**

7" Heavy Duty and 9" Standard Duty Sanders, 7" Polishers. All ball bearing—permanent lubrication. Air intake through handle cools grip; insures adequate supply of clean air to motor. Slide safety switch. 110 or 220 volt AC/DC Universal motor.



Metalmaster 1/4" PALM DRILL

Model 24 — Multi-purpose, powerful, compact drill. All ball bearing. Jacobs Chuck. Pistol Grip. 110 or 220 volts AC/DC.

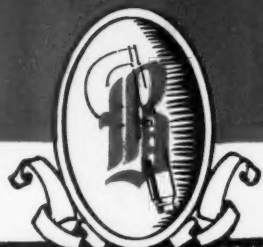
THE Bradford line of Precision Electric Tools is the most complete line of modern design available today.

Each Bradford Tool model is the result of skillful, superior design by a group of the industry's foremost electric tool engineers.

Precision methods of manufacture and highest quality materials provide greater accuracy, peak operating efficiency and maximum life of the tool.

Large volume production and parts standardization permit the sale of these precision tools at the right prices.

• **WRITE FOR NEW COMPLETE TOOL CATALOG**



The **BRADFORD**
MACHINE TOOL CO.

663 Evans Street, CINCINNATI, OHIO

Speedway

REPLACEMENT PARTS

RUGGED...Yet Precise!

● Built to take a beating, Speedway Replacement Parts are extra rugged. Yet they are machined to exact tolerances . . . you don't have to wonder whether they will fit. This means time and money to you, because you can depend on Speedway. We do the inspecting, step by careful step, so you can sell with assurance!

SPEEDWAY PRODUCTS CORPORATION
MANUFACTURERS OF REPLACEMENT PARTS
1400 EAST 20TH STREET • INDIANAPOLIS 7, INDIANA

Cam Shaft Bearings
Connecting Rod Bearings
Main Bearings
Aluminum Pistons
Piston Pins and Bushings
Valves and Valve Guides
Valve Springs
and Retainers
Water Pumps and Kits
Motor Mounts
Tie Rod Ends
Shackle Sets
King Bolt Sets

PRODUCTS OF PROVEN PRECISION



NO OTHER CAR HEATER CAN LIST THESE **HOT** FEATURES



You get them all
in the new
Motorola
FULLY AUTOMATIC GASOLINE
CAR HEATER

- ✓ POSITIVE HEAT SELECTOR—THERMOSTATIC CONTROL.
- ✓ FAST, CONSTANT HEAT—Heats in a minute or less! Maintains pre-selected heat *constantly*—it's thermostatically controlled!
- ✓ ALL THE HEAT YOU WANT—So powerful it produces sufficient heat to keep an average size room comfortably WARM.
- ✓ HEATS WHEN YOUR ENGINE IS OFF—Operates independently of engine and fuel pump—does not affect idling of engine.
- ✓ EASY TO INSTALL IN ALL CARS—EVEN THOSE WITH AUTOMATIC TRANSMISSION.
- ✓ TWO MODELS—for cowl mount or underseat installation. Both models engineered for thorough, scientific air circulation—both have new, efficient defroster-blower system.

**YOUR MOTOROLA DISTRIBUTOR HAS THE
FACTS! GET IN TOUCH WITH HIM TODAY!**

Get the complete profit story on this wonderful new car heater. Remember—with the new Motorola Car Heater all car owners are your cus-

tomers—for it's the kind of heater they'll want to replace the ordinary-type heaters already in their cars. Call your distributor TODAY.

Motorola Inc.

CHICAGO 51 • MAKERS OF MOTOROLA CAR AND HOME RADIO

OCTOBER, 1947

When writing to advertisers please mention Motor Age



"Yes, sir—when the boss installed AIR CLEAR in our shop he sure put himself in solid with us mechanics. Now, we go through the whole day *without headaches from exhaust gases*. We feel better, work better, and we're not all dragged out at the end of the day.

"And the boss feels better, too. Profits are up—gripes are down; and besides, he has the satisfaction of knowing that *his* garage is a healthier, better place to work in."

Write for complete details

GENERAL OZONE CORPORATION
17 West Sixtieth Street, New York 22, N. Y.
New York • Chicago • Denver



GARAGE *AirClear*

Destroys Exhaust Gases Electrically
EFFICIENT • DEPENDABLE • ECONOMICAL

Manufacturers of ozone generating equipment for garages . . . cold-storage warehouses . . . refrigerated cars . . . walk-in coolers . . . air recirculating systems . . . homes . . . hospitals.

The NEW *Mallory* DISTRIBUTOR-GOVERNOR



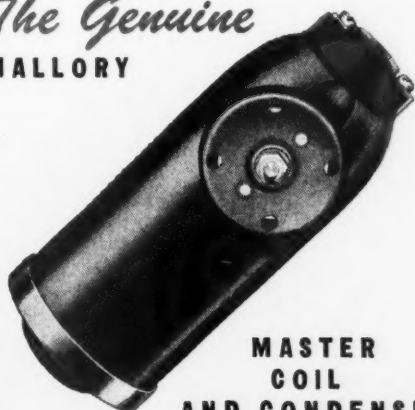
A TRUCK GOVERNOR THAT GUARANTEES

Smoother Operation...Less Power Loss
Added Operating Efficiency...Easier Installation

- **REDUCES POWER LOSS:** The Mallory Governor does not choke the engine when pulling a heavy load up hills because the governor throttle remains wide open until the engine reaches its governed speed. Hence, the Mallory Governor reduces power loss.
- **UNEXCELLED SPEED REGULATION:** The new Mallory Governor is operated by a vacuum powered diaphragm which is controlled by a centrifugal air valve on the distributor shaft. This unique arrangement provides instantaneous response, thus making the Mallory Governor free from surging.
- **UNRESTRICTED ACCELERATION:** The Mallory Governor permits the engine to accelerate normally since the governor throttle remains wide open until the engine reaches its governed speed.
- **QUICK INSTALLATION:** Due to its revolutionary design, the Mallory Distributor-Governor can be installed on most popular truck designs without need for special drive, linkage, or adaptor accessories. Only one piece of metal tubing is used, connecting the distributor with the governor.

NOW STANDARD EQUIPMENT ON AUTOCAR, FEDERAL TRUCKS, GENERAL AMERICAN AEROCOACH, AND OPTIONAL EQUIPMENT ON INTERNATIONAL TRUCKS.

The Genuine MALLORY



**MASTER
COIL
AND CONDENSER**

The Mallory Coil has universal installation features. Brackets and adaptors are supplied for all makes of cars and trucks.

The Mallory Master Coil delivers more energy—insures easier starting, is water proof and age-proof because of a new oil-sealed design that permits an engine to run with entire coil submerged in water.

6 Volt Coils—\$10.00 12 Volt Coils—\$12.50
Condensers—\$2.00

Fleet Owners • Service Stations • Jobbers
Write for complete information.

MALLORY ELECTRIC CORPORATION
Manufacturers of Automotive Electrical Devices

Fullerton at Cloverdale
DETROIT 4, MICHIGAN

SHOW IT...
SELL IT...

PROFIT!

Saginaw

RECIRCULATING-BALL

BUMPER JACK

ENTIRELY NEW PRINCIPLE!

Rolling balls, inserted between the threads, reduce friction and increase efficiency. The balls recirculate through a special raceway, as shown.



Why can this revolutionary new jack steal your market?

Why? Because *this* is no ordinary jack! The Saginaw Bumper Jack makes use of the same recirculating-ball principle proved on military aircraft to actuate wing flaps, bomb-bay doors and landing gears . . . *proved to do more work with less effort!*

Built by the maker of steering gears for America's leading cars, this jack requires no more effort than steering a car . . . another reason why the Saginaw Recirculating-Ball Bumper Jack is so *easy to sell*.

Start cashing-in on the big market waiting for such an easy-to-use and dependable jack . . . see your United Motors distributor *today*.

THE SAFEST — EASIEST — STURDIEST BUMPER JACK EVER DEVELOPED!

For extra profits, just show it to every customer



Saginaw Recirculating-Ball Bumper Jacks are available through United Motors distributors. Call yours today!

A CHILD CAN USE THIS JACK!

Only six pounds' turning effort jacks up a car — with ease and perfect safety! Solid . . . sturdy . . . and trouble-free!

Rust-proofed! Dirt-protected!
No danger of age-deterioration!

No fluid to leak —
nothing to get out of order!

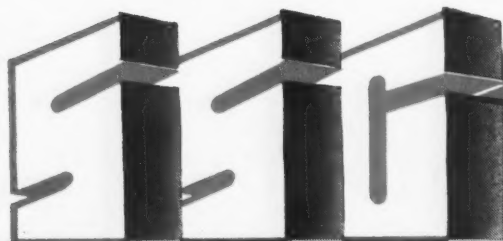
Handle can't spin while
car is being lowered!

Sturdy bracket
—firm-fitting!

Pressed-steel frame
—solid—rugged!

Compact, precision product!
Dependable . . . long lasting
. . . and trouble-free!

Wide-area base
assures firm solidity



Saginaw

STEERING GEAR DIVISION
General Motors Corporation, Saginaw, Michigan

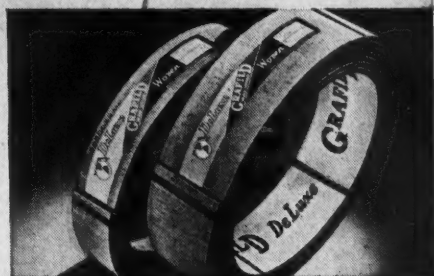
PRODUCTS

STEERING GEAR ASSEMBLIES • STEERING LINKAGE ASSEMBLIES
PROPELLER SHAFTS • DIESEL ENGINE AND AIRCRAFT PARTS

YOU GET A
World of Value
 WHEN YOU USE
WORLDBESTOS
 BRAKE LINING



TRUCK GROUP BLOCKS — These master segments are engineered for thousands of models of trucks dating from 1933.



DELUXE WOVEN — A super-quality, dense, high friction lining for passenger cars, trucks and industrial applications.



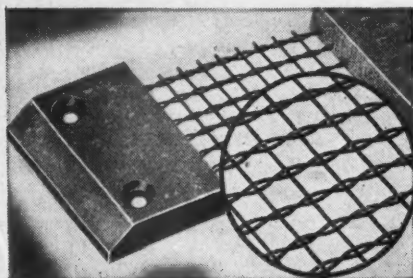
PRESCRIBED FRICTION SETS — "Prescribed" or "Engineered for each type brake" to give correct braking, longer life.



ROYAL GRID MOLDED (ROLLS) — A top quality molded lining designed especially for internal brakes. Quiet and long-lived.



GRID LOCK SETS — Wire back sets for Ford, Chevrolet, Plymouth and the popular GM and Chrysler cars.



MESHLOCK WIRE BACK REINFORCEMENT prevents "spot bulge" when riveting lining to brake shoes — no more daylight between lining and shoe, spongy pedal action or tough adjustments.



HETRO BLOCKS — Truck and bus blocks engineered in several formulas. Provide lowest cost per mile; highest safety factor.

WORLD BESTOS CORP.

NEW CASTLE, INDIANA

6002

MULTI-TON GIANTS— *Feather touch* CONTROLLED!

Kelsey Hayes' Lathan De Luxe "Finger-tip" Valves are considered best available.

Kelsey Hayes' Vacdraulic Superior Brake Power Units have valves and all other moving parts sealed inside.

Kelsey Hayes' Lathan Valves, operating trailer air-suspended power chambers, are nationally proven.

Kelsey Hayes' Lathan Power Chambers, in use 20 years, are universally adopted.

Kelsey Hayes' Lathan Vacuum Reserve Tanks for trailer power brakes are most dependable.

It's Kelsey-Hayes Vacdraulic and Lathan Power Brake Equipment for Superior Performance!

Driving rains . . . slippery highways . . . dangerous curves. The safety of the nation's mighty highway giants constantly depend on smooth, safe, sure braking power. Vacdraulic and Lathan power-brake equipment provides that kind of protective braking—it's the result of Kelsey-Hayes' many years of engineering "Know-How." Just a feather-touch of the brake controls, and the mightiest giant of the road comes to a fast, silky-smooth, safe stop—perfectly controlled. We'd like to tell you more about Kelsey-Hayes' Vacdraulic and Lathan power-brakes—how they can do a better protective braking job for you. Write Kelsey-Hayes Wheel Co., Detroit 32, Michigan.



ASSURES PRODUCTS OF PROVEN SUPERIORITY AT . . .

KELSEY-HAYES WHEEL COMPANY

DETROIT 32, MICH.

Wheels • Hub and Drum Assemblies • Brakes • "Vacdraulic" Brake Power Units • "Lathan" Vacuum Power Brake Equipment • "Magdraulic" Electric Brakes • For—Passenger Cars • Trucks • Tractors • Trailers • Farm Implements



How to shine with customers

ONE way to shine with customers is to let them know you use the very best of repair materials. They'll be convinced of that when you show them the trade-mark "Timken" on the tapered roller bearings you install.

Timken is the best known name in bearings as a result of almost 50 years of dependable performance in the automotive and industrial fields—plus consistent advertising year after year. It means highest quality to your customers. And the fact that you use them can give your reputation an added lift—if you . . .



*... Just tell 'em it's "TIMKEN"**



Timken tapered roller bearings carry any combination of radial and thrust loads. They're first choice on automobiles, trucks, busses, and trailers—wherever the loads are tough.

Because of their design and construction, Timken bearings cut friction to a minimum, reduce wear, hold up under the heaviest loads, and normally outlast the vehicle itself.

The Timken Company is the only bearing manufacturer in America which makes its own steel. So, Timken bearing quality is controlled from the melting of the steel to the final assembly of the bearing. Thus, you are assured of uniform top quality in every Timken bearing you install.

Be sure to look for the trade-mark "Timken" whenever you buy tapered roller bearings. The Timken Roller Bearing Company, Canton 6, Ohio.

TIMKEN

*TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER □ BEARING TAKES RADIAL ○ AND THRUST —○— LOADS OR ANY COMBINATION ☼

Dealers— Get in on this nation-wide public relations campaign!

TYPICAL J-M MESSAGE

to 30,000,000 monthly listeners

Tonight Johns-Manville has news for car owners about a nation wide movement on the part of Johns-Manville Brake Service Dealers. They have launched a six-point program to protect their customers. The dealers who endorse this program will display a wall plaque containing a set of sound business principles. The plaque states in part, "We pledge that we will continue to give our customers a true appraisal of the conditions we find after making a skillful, thorough brake inspection." For quality brake lining, good workmanship and fair prices, look for the dealer who has endorsed this program—you can identify him by the blue and yellow Johns-Manville Brake Lining sign on his place of business.



"BILL HENRY AND THE NEWS" Monday thru Friday
CBS... 8:55 P. M. EST.

Building Public Confidence and Increased Sales for the Reliable Brake Service Dealers

If you are the forward-looking brake service dealer in your community, you should be cashing-in *now* on the nation-wide public relations program sponsored by Johns-Manville for reputable brake service dealers.

This campaign is built around a dealer pledge to give customers quality materials and good workmanship at fair prices.

Reputable dealers who sign this pledge are given a handsome plaque to display prominently . . . they are

given valuable merchandising aids . . . they get the powerful support of J-M's nation-wide radio program.

Frequent messages like the one above are broadcast to millions of motorists . . . telling them to look for the J-M Plaque, displayed *only* by J-M Dealers who have pledged fair prices and good workmanship.

Each J-M Dealer who takes part in this nation-wide public relations program displays a flashing Stop & Go sign and a blue-and-gold Dealer sign

. . . in addition to the Plaque. The public is told by radio to look for these signs identifying the J-M Dealer as the man who will give his customers a square deal.

Learn how you can participate in this national public relations program . . . how you can tie-in at once with this forceful radio advertising broadcast for *your* interest. Call in your Johns-Manville Distributor or write today to Johns-Manville, Box 290, New York 16, N. Y.



Here is Your Identification

J-M radio messages tell motorists to look for the blue-and-gold dealer sign (at right) and the Plaque which can be displayed only by dealers who pledge a square deal to their customers.



• BRAKE LININGS

• BRAKE BLOCKS

• CLUTCH FACINGS



Re-Wire With
PACKARD FOUR-FORTY
IGNITION CABLE SETS AND SPOOLS

USE THE IGNITION CABLE THAT'S
BETTER 7 WAYS

- 1) Better HEAT Resistance
- 2) Better COLD Resistance
- 3) Better OIL Resistance
- 4) Better MOISTURE Resistance
- 5) Better ABRASION Resistance
- 6) Better CORONA Resistance
- 7) Better AGE Resistance

The special-compound protective sheath on Packard Four-Forty makes the difference!

It stands up under *all* conditions of automotive use . . . doesn't break down, puncture, rupture, crack, rot or fray like ordinary cotton-braid-and-lacquer coverings.

That's why Packard cable with a similar protective sheath is used by leading airlines, where the best is always demanded.

That's why Packard Four-Forty provides longer life and better performance in your customers' cars and trucks.

Always re-wire with Packard Four-Forty. Your jobber has it now.

THERE'S MORE
MPR^{*}
(*Miles Per Replacement)
IN PACKARD CABLE

Packard
REG. U.S. PAT. OFF.
TRADE MARK



Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

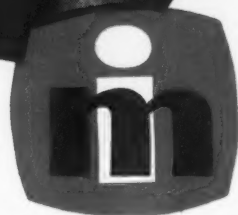
STAT·A·LINER

*America's No. 1
Wheel Balancer*



"Jeweled Movement"
... of Pivot and Bearing
Makes Extreme Accuracy Quick and Easy

HERE is the wheel balancer that fits your business to a "T." Does a complete, accurate balancing job in about five minutes. Every wheel can be guaranteed for good road performance. Accommodates all sizes of passenger car and truck wheels. Requires no specially trained personnel. Takes as little space as a tire itself . . . There's no doubt about it, the Stat-A-Liner is America's No. 1 wheel balancer for profit. Ask your jobber about the new Stat-A-Liner — or write for complete information direct to Milwaukee International, Inc., Milwaukee 2, Wisconsin.

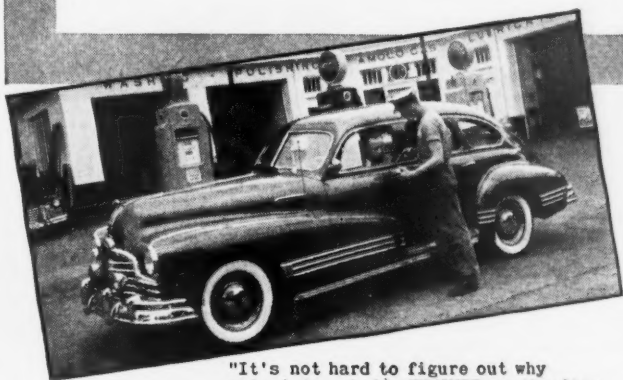


MILWAUKEE INTERNATIONAL INC.



**MORE MOTORISTS USE MORE SIMONIZ
THAN ANY SIMILAR PRODUCT!**

**"There's No
Seasonal Let-down
In My
Simoniz Sales!"**



"It's not hard to figure out why motorists ask for SIMONIZ month after month. Look at the ads the SIMONIZ people run in the magazines all year long. Upper Darby car owners get the facts about SIMONIZ and Simoniz Kleener -- we get more of their business for services and accessories by having SIMONIZ when they want it!"

Robert P. Feldbaumer

7013 Aberdeen Road
Upper Darby, Pa.

SIMONIZ and Simoniz Kleeners are the biggest sellers in their field . . . and the widest advertised! This advertising reaches your customers the year 'round. They'll look to you first for SIMONIZ . . . so don't disappoint them. Remember, a satisfied customer is a sure customer for all your services and accessories.

One service that motorists always demand is SIMONIZING. Why not "double your take" by offering this service as well as SIMONIZ and the Simoniz Kleeners, liquid and paste? A FREE operation and promotion manual tells you how to set up your station for SIMONIZING Service. Get your copy now—write today!

THE SIMONIZ COMPANY, CHICAGO 16, ILLINOIS



MOTORISTS WISE

SIMONIZ

TRADE MARK REG.

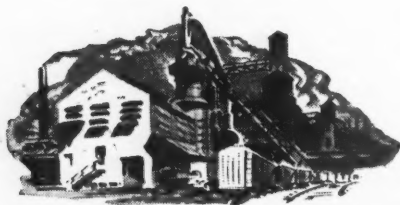
PRESERVES AND PROTECTS FINISHES

The Story of a Genuine Ford Piston Pin

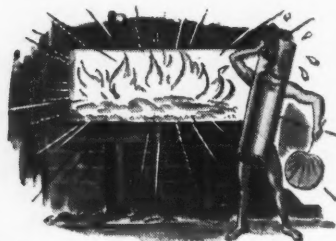
OR WHY IT PAYS TO
USE **GENUINE
FORD PARTS**



1 I arrived at Ford's Rouge Plant as iron ore aboard a freighter . . . and was hustled through the roaring blast furnace to the great Ford steel mills . . .



2 There I was made into a very special kind of steel—one of dozens of kinds of steel that go into Genuine Ford Parts.



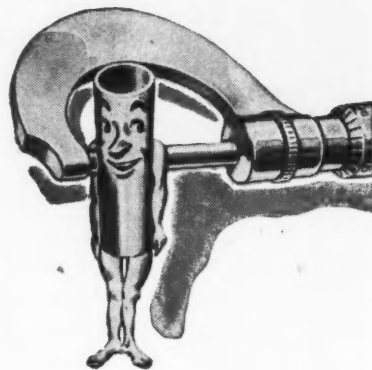
3 I was pretty hot stuff at this point, when they cast me into a rough pin. So they let me cool off gradually and evenly.



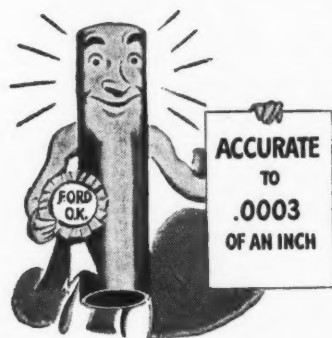
But not for long, 'cause I was popped back in the furnace for another roasting and was case hardened. I was a real tough guy!



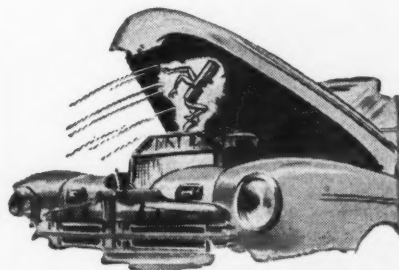
4 Up till this time I guess I was a pretty rough looking character, but you should have seen me after I was machined and polished . . . bright and shining as a new nickel!



5 I was feeling like a pretty dog-goned fine pin . . . but those Ford engineers are never satisfied. Boy, they gave me a series of tests that was really the works!



6 I passed 'em all in good order. And was I proud of that Ford OK . . . 'cause you know not every pin is within .0003 of an inch of absolute accuracy . . . which I am!




7 Then I was branded a Genuine Ford Part and was soon on my way to a Ford Dealer. And a couple of days later I hopped into a Ford engine, where I felt completely at home. For you see I was made right, so naturally I fit right and will last longer.

FORD MOTOR COMPANY

IMPORTANT and TIMELY MESSAGE

TO EVERY INDEPENDENT AUTOMOTIVE REPAIR SHOP,
DEALER, GARAGE, SERVICE STATION, FILLING STATION



- Your market is every car owner in your section . . . every car, truck and bus owner that comes into your place. By handling nationally advertised brands of replacement parts, manufactured by independent producers, you can logically solicit and secure the business of owners of *all* types of cars, trucks and buses—the owners of motor vehicles who are your logical prospects.

- Crescent Wiry Joe offers you an independent line built by the largest independent wire mill in the world specializing in automotive wire and cable.

- Crescent Wiry Joe—a *complete* line of automotive wire and cable—is engineered by specialists in the manufacture of automotive wire and cable specifically for the entire field of the automotive replacement market.

THE CRESCENT COMPANY, Inc.



When next in our neighborhood, drop in—see how Crescent Wiry Joe automotive cable is made from copper to finished product in one plant under one roof.

MOTOR MOUNTINGS



Six popular numbers for Ford, Mercury and Chevrolet cars and trucks.

No. 401—Improved Side Motor Mounting to eliminate clutch chatter, for 1935-42 Chevrolet cars and sedan delivery trucks.

No. 924—Improved Front Engine Mounting for 1932-34 Chevrolet cars and 1932-40 ½, ¾ and 1½-ton Chevrolet trucks.

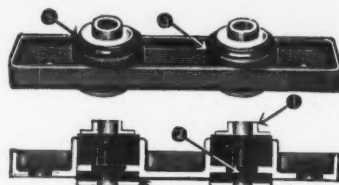
No. 954—Improved Front Engine Mountings for 1935-42 Chevrolet cars and sedan delivery trucks.

No. 971 A & B—Motor Support Rubber Mountings for Ford and Mercury cars.

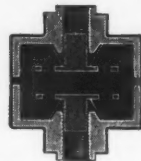
No. 66—Improved Front Motor Support for Ford A and AA.

No. 42—Front Radius Rod and Rubber Bushing Socket and Cap for A and AA Fords.

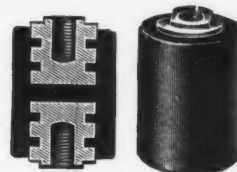
ORDER FROM YOUR JOBBER



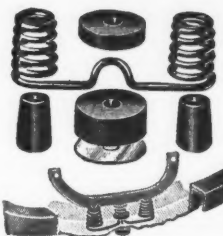
924



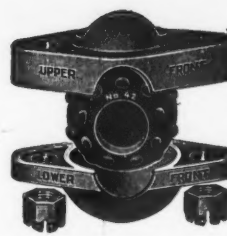
954



401



66



42

More than 200 Champ-Items Short Cuts—
Time Savers—Money Makers.

CHAMP-ITEMS, INC.

6191 Maple Ave., St. Louis 18, Mo.



New... Exciting Gift Item

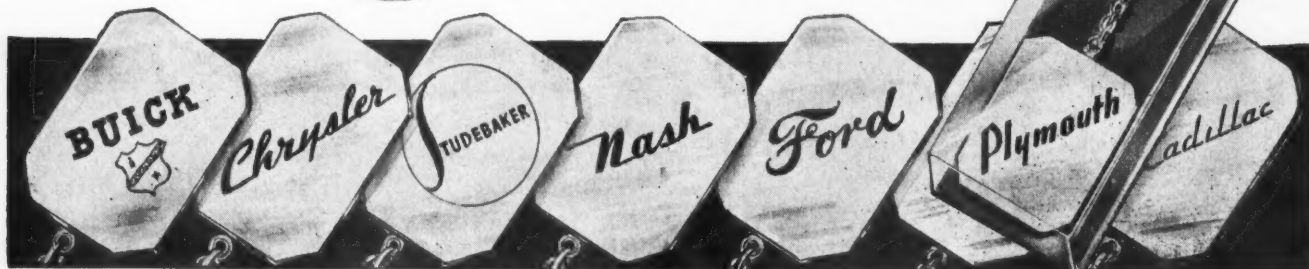
The Road King Key Ring
to match all leading makes of cars

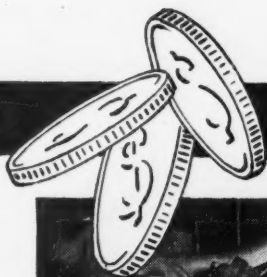
18 Karat Gold Plated, with fired enamel design, displaying car trade mark. Reverse side for engraving. Easy to open and close sliding rings. Packaged individually in clear plastic gift box, one dozen to container. Available in four dozen assortments, which proportionately include all leading makes of cars. Eye-catching display card. Wholesale price, \$16.50 per dozen. Retail price, \$2.50 each. Write for details.

MARTIN BISHOP MFG. CO.

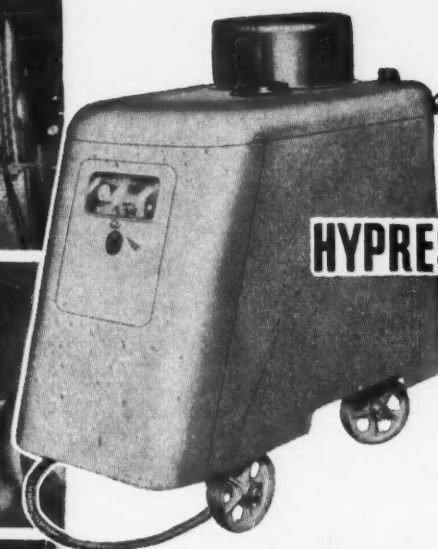
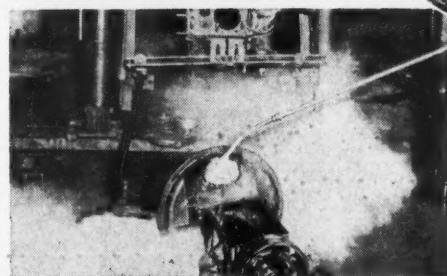
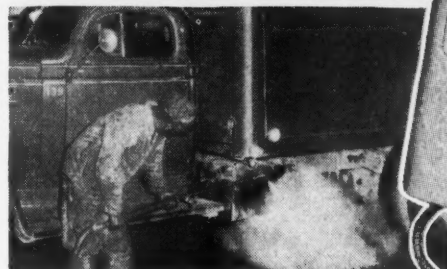
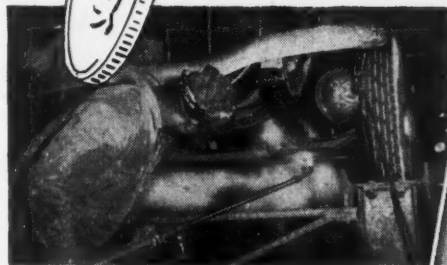
1123 Broadway • New York 10, N. Y.

Design and use of
trade marks approved
by manufacturers.





CASH IN ON CLEANLINESS WITH



HYPRESSURE



GET MORE BUSINESS

MAKE MORE PROFITS

SAVE TIME LABOR AND EXPENSE

NEW BUSINESS will start rolling in almost from the first day you put Hypressure JENNY Steam Cleaner to work for you.

The reason is simple. With Hypressure JENNY you can flush dirt-encrusted, oil-soaked motors *absolutely clean* in 10 to 15 minutes . . . remove dirt, grease, bugs and leaves from radiators and grill work . . . clean car chassis, wheels, springs and the undersides of fenders in a jiffy. These are services every car owner wants—business that means extra profits for you. And you'll make additional profits replacing the worn and damaged parts Hypressure JENNY uncovers in such cleaning jobs.

Hypressure JENNY will increase your profit on repair jobs, too. For JENNY Steam Cleaning *before* repairs cuts repair time practically in half by saving up to 40% of your mechanics' time usually lost wiping oil, dirt and grease from tools and equipment. Hypressure JENNY reduces shop maintenance expense by cleaning grease racks, pits, runways, floors, walls, windows, etc., 8 to 10 times faster than by hand methods.

Hypressure JENNY Steam Cleaner is a sturdy, compact, portable unit easily moved from one cleaning job to another; and is so safe and easy to use that ordinary labor can operate it.

Why not write today for complete information and the address of your nearest Hypressure JENNY Dealer. There is no obligation.

The NEW ADJUSTA-BLAST GUN For Use With Hypressure JENNY Steam Cleaner

. . . gives the operator instant, finger-tip-control of the right type and amount of spray or water for any cleaning requirement. The ADJUSTA-BLAST GUN more than doubles the cleaning efficiency of any Hypressure JENNY now using the old type cleaning gun. It is easy and simple to attach. Ask your dealer about it when you purchase your new Hypressure JENNY Steam Cleaner.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING COMPANY

P. O. BOX 91

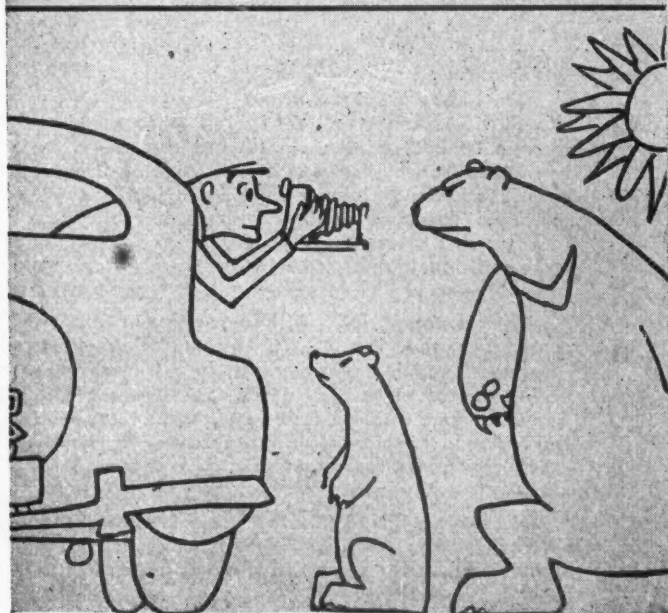
CORAOPOLIS, PA.

HAPPY HOLIDAY *presents:*

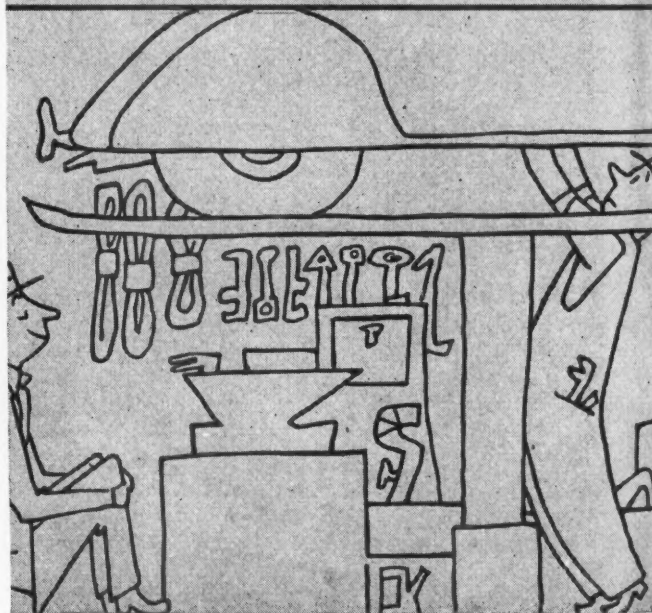
Holiday's great automotive market...

The hottest thing on v

2 These families really get around, too ... average 2.8 vacations a year!



3 And when they're going bye-bye ... they really buy!



Take a careful look at what they bought and you'll agree that the more than 750,000 families who travel in Holiday are your biggest, busiest, buyingest automotive prospects.

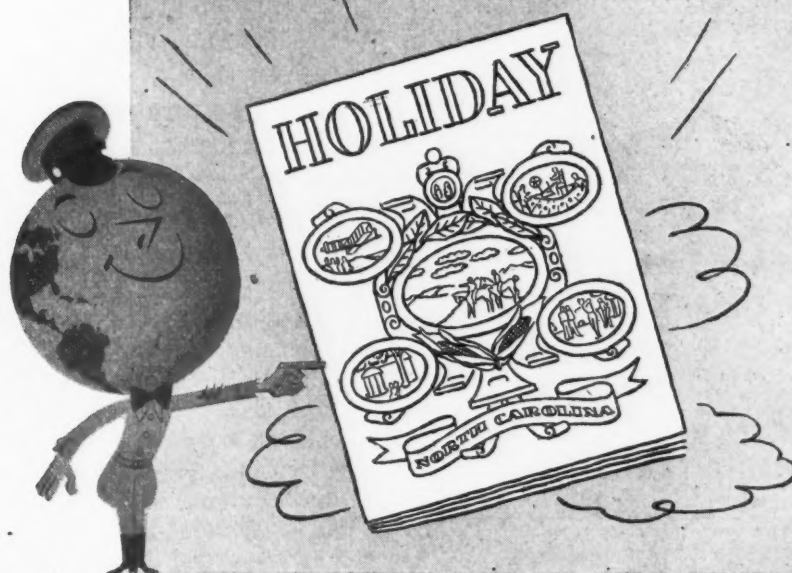
Holiday's zooming circulation not only goes to high-income, car-owning families—it reaches

the nation's fastest-moving, most travel-loving families ... families in the Holiday mood!

Reach these good prospects by featuring Holiday-advertised products—reach them with travel on their minds! Plan today to get your share of the great new Holiday market!

1 Holiday now reaches more
than 750,000 families!

wheels!



Look at the tremendous automotive purchases of vacation-bound Holiday families

(Based on a recent survey)*

94.8% had cars serviced	49.4% had brakes adjusted
55.2% had complete motor tune-ups	8.0% had new piston rings installed
43.1% bought new tires (average number: 2.6)	12.1% bought new windshield wipers
32.8% bought new tubes (average number: 2.4)	12.6% bought new sealed-beam headlamps
10.3% bought new storage batteries	14.4% bought new oil filters
9.8% had old batteries recharged	90.2% had pre-trip oil change
11.5% had brakes relined	20.1% bought new spark plugs (average number: 6)

*Survey based on interviews with Holiday families that vacationed during the fall of '46. Average mileage covered by these families was 4,407—70% more than the '46 national vacation trip average.

The most responsive new
market today is exclusive with **HOLIDAY**

A CURTIS PUBLICATION

INDEPENDENCE SQUARE, PHILADELPHIA 5, PA.

Complete UNIVERSAL JOINT ASSEMBLIES



• For FORD
CHEVROLET
and PLYMOUTH

Write for circular of our complete
list of Universal Joint Assemblies,
Repair Kits, etc.

AUTOMOTIVE MAN'FG CO., INC.
570 W. FULTON ST. CHICAGO 6, ILL.

When the Motor is Down
Build it Up with...

**Allied
MOTOR PARTS**

NAPA
Assurance of Quality

ALLIED MOTOR PARTS CO.
DETROIT 1, MICHIGAN

CORDS PISTON RINGS

The Modern Way!
**ENGINEERED
PISTON RING SETS**

This bag contains 1
CORDS
Oil Ring
3rd GROOVE

This bag contains 1
CORDS
Oil Compression Ring
2nd GROOVE

This bag contains 1
CORDS
Oil Compression Ring
TOP GROOVE

**Sealed
IN PACKAGES**

New scientifically designed, precision made, Thermo-Formed Cords Piston Rings now available for all motor vehicles. Exclusive patented Concave Steel Segment Rings in Cords combination sets stop cylinder wear—save gas and oil.

There are CORDS for every car
Every car needs CORDS

CORDS
PISTON RING MANUFACTURING CO.
371 EIGHTH AVENUE • SAN DIEGO, CALIFORNIA

Shurhit Triple Seal Moisture-Proof CONDENSERS



Ask your Shurhit jobber or write us for details on these super-quality replacement parts. Complete Shurhit line includes Condensers, Contact Points, Rotors, Caps, Coils, Brushes, Cut-Outs, Switches, and Spark Plugs.

SHURHIT PRODUCTS, INC.
Waukegan, Ill.

UAW Local Demands 62½ Cent Raise

Not to be outdone by John L. Lewis, Local 415, UAW-CIO, has served demands on more than 80 automobile dealers in Detroit for wage increases approximating 62½ cents an hour for 2300 employees. Demands cover employees in 16 classifications with a minimum guarantee of \$2 an hour for mechanics, painters, bump shop employees, and service salesmen. The negotiations are being carried on with all Ford, Mercury, and Lincoln dealers, all Buick dealers and the majority of Chevrolet dealers.

New Sales Manager for Arrow Safety Device

Appointment of Benjamin S. Rogers as sales manager has been announced by the Arrow Safety Device Company, manufacturer of automotive lighting and safety equipment.

Rogers, a Naval Lieutenant Commander during the war, comes to Arrow from Rust Craft Publishers, Inc., Boston, Mass.

Previously, he was with Wall Rope Works, New York City, and Congoleum-Nairn, Inc., Kearny, N. J.

**for SAFETY
REFLECTORS • LAMPS • FLARES**

GROTE

GROTE Manufacturing Company, Inc. Bellevue, Ky.
Automotive Sales Office: Moorestown, N. J.

THE NEW Hyland HONE
Saves Time • Low Price • Guaranteed

No. 10 — \$3.90
¾" to 1"

No. 20 — \$3.90
1" to 1½"

No. 30 — \$4.15
1½" to 2"

No. 50 Set Services Brake Cylinders ¾" to 2" \$11.95

HYLAND MANUFACTURING COMPANY
818 JOHN STREET PORTSMOUTH, OHIO

**LIFETIME
Guaranteed**

**International Parts
Mufflers**
SUPER SILENCING

INTERNATIONAL PARTS CORP., CHICAGO 5, ILL.
INTERNATIONAL PARTS (CANADA) LTD., TORONTO



**CARBUSOL
CLEANS**
Pistons,
Carburetors,
Fuel Pumps —
FASTER!

5 GAL. \$11.50
DEALER'S NET

The KLEER-FLO Company • N. Y. 19, N. Y.
Sold by leading Automotive Jobbers Coast to Coast

Gear Pullers

GARAGE TOOLS
CARBON SCRAPER
CREEPER CASTERS
BUSHING REMOVERS
REAMERS

Cal-Van
MACHINE PRODUCTS INC.
302 WATER ST. JACKSON MICH. U.S.A.

★ Write for Catalog

Valvoline Accepts No Substitute Crude Oils

In making Premium Grade motor oils, there's no real substitute for fine, naturally strong crude oil. Additives improve motor oil—and Valvoline contains them. But the outstanding performance of Valvoline is due to the fine crude from which it is refined. Valvoline is satisfied with nothing less than the world's finest crude—select 100% Pennsylvania grade.

This same insistence on quality is to be found in Valvoline's refining process too. Valvoline is filtered through a specially prepared Bauxite filter medium in such a way that its natural superiorities are retained and the undesirable elements removed.

This method is slower—more expensive. But it results in an "oilier" motor oil of greater film strength, with better resistance to heat and pressure—an oil that is less likely to form carbon, sludge, and engine varnish.

These superior qualities of Valvoline are not mere selling points; they show up in better engine performance—longer engine life—and reduced repair bills. Valvoline users are loyal Valvoline "fans"—they will accept no other brand. This loyalty is proof that car owners see the difference in the way their cars run and last with Valvoline.

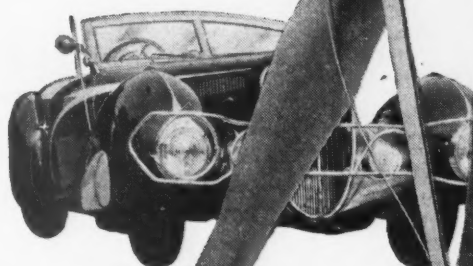
We back every quart with an unconditional guarantee. We're proud to offer you Valvoline; you can be proud to offer it to your customers.

The Girl

FAULTLESSLY
COSTUMED BY
FRANCES SIDER

Her Car

FAULTLESSLY
LUBRICATED WITH
VALVOLINE...
MADE EXCLUSIVELY
FROM PENNSYLVANIA
CRUDE OILS...
THE WORLD'S FINEST



AS ADVERTISED IN
Current Issues of
LIFE and TIME



VALVOLINE

The Original Pennsylvania
MOTOR OIL

Unconditionally Guaranteed

Freedom-Valvoline Oil Company, Dept. 12J, Freedom, Pennsylvania
There's a Tectyl solution for every industrial rust problem. Write for Tectyl bulletin describing many varieties and uses. War-proved Tectyl stops rust.

CLUTCH FACINGS • RIVETS
HURRY CHARLOTTE! OR THERE'LL BE NO—
HALL'DEEN PARTY
HERE CATCH!
ATTA GIRL! AND THANKS TOO FOR
SOUTHERN
FRICTION MATERIALS CO.-CHARLOTTE, N.C.

BRAKE SHIM STOCK • RELINING EQUIPMENT
HYDRAULIC BRAKE PARTS • BRAKE FLUID

SPINNING POWER



WITH

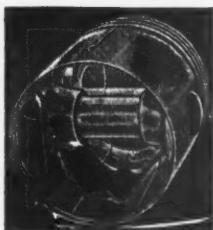
MASTER RECAMS

MASTER RECAMS are individually designed for all late model cars; easily installed without removing pistons. The profitable way to Stop Piston Slap, Oil Pumping and Motor Noise.

50¢ EACH

REGULAR DISCOUNTS TO JOBBERS AND DEALERS

WHERRY ENGINEERING COMPANY
1227-29 Morganford Rd., ST. LOUIS 16, MO.



SAFE
SPEAKER
QUALITY

SPEAKER TUBE AND TIRE REPAIRS
One Reliable Source for all your needs
Electromatic Vulcanizer • Match Patch Vulcanizer • Match Patches • Electro-Patches • Rubber Rivets • Replacement Valves • Electro-Timer • Casing Patches • Convertible Tire Valves • Valves and Caps • Motorists' Kits • Solvents • Beveled Patches.
J. W. SPEAKER CORP. • Milwaukee 12, Wis.

Chevrolet Opens Campaign

As an example of how car factories are thinking and what they are planning to stimulate the sale of service and parts, Chevrolet has started a nation wide campaign spark plugged by the slogan "Bring It Back to Chevrolet—Parts—Service—Accessories." The success of the campaign will be closely watched by other dealers, parts manufacturers and jobbers. It is particularly interesting to note that Chevrolet reports only 32 per cent of their owners have their cars serviced by Chevrolet dealers. This same ratio is approximately correct for all dealers also, the remainder of the service work being performed in independent shops.

Costs Cut Chrysler Net

Analysis of the Chrysler Corporation's financial report for the first six months of 1947 reveals that profits for the second quarter of this year were substantially below those made in the first quarter. After all charges and taxes the six months profit was \$36,122,452. The corporation at the close of the first quarter reported a profit of \$21,502,407 which indicates a profit for the second quarter of \$14,620,045.

For Faster and More Accurate BATTERY TESTING
IMPERIAL "K"
No. 515-T
BATTERY HYDROMETER
★ Thermometer Type
★ Shatterproof Glass Jar
ORDER FROM YOUR JOBBER
THE IMPERIAL BRASS MFG. CO.
1317 W. Harrison St. Chicago 7, Ill.

THE ANDREWS LINE...
Your Best Electrical Connection
CUSTOMER SATISFACTION SINCE 1921
Andrews
MANUFACTURING CO.
ST. LOUIS, MO.

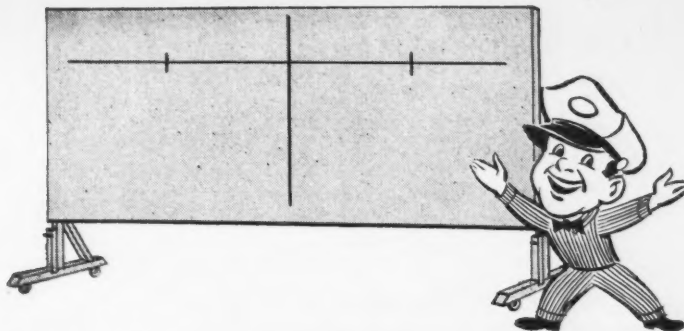
Hygrade Fine
AUTOMOTIVE PRODUCTS
HYGRADE
REPLACEMENT PARTS
CARBURETOR & FUEL PUMP PARTS
SPEEDOMETER CABLE AND CASING
SHOCK LINKS AND BUSHINGS
FUEL LINES AND FITTINGS
HYGRADE PRODUCTS CO., INC.
35-35 Thirty-fifth St., Long Island City 1, N. Y.

DEVILBISS
Spray-Painting Equipment—
Spray Booths—Exhaust Fans—
Air Compressors—Hose and
Hose Connections—Oil Guns.
See your authorized Devilbiss distributor
THE DEVILBISS COMPANY
Toledo 1, Ohio

WELLS
Genuine Ignition
USE PROVED IGNITION PARTS
QUALITY TELLS DEMAND WELLS
WELLS MFG. CORPORATION
FOND DU LAC, WIS.

KEEP OIL FREE FROM ABRASIVES
KEEP IT CLEAN WITH
PUROLATOR
THE OIL FILTER
PUROLATOR PRODUCTS, INC.
Newark 2, N. J.
Founder and leader of the oil filter industry

Quick profits with G-E Lighting Service

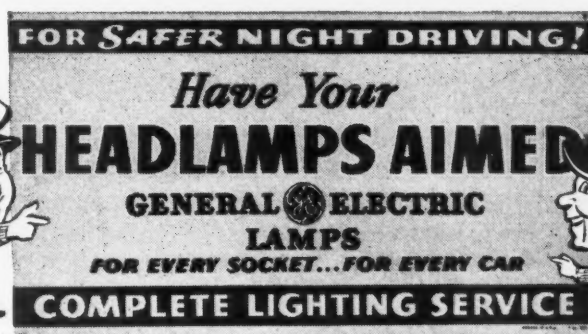


1 READY NOW—THE NEW G-E AIMING SCREEN! It's a cinch to aim headlamp beams correctly with the help of this screen. (Manual gives mounting instructions—you furnish frame.)

ONE OUT OF SIX CARS on the road today needs essential lamps, police reports show—and nearly half of all cars have mis-aimed headlamps. So Lighting Service should be *big business* for you! Here's how to get your share of the profits:

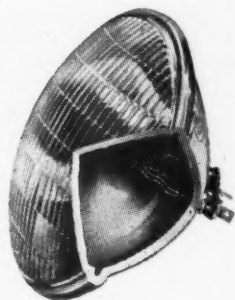
- 1. Start by selling** a headlight aiming job to every customer who leaves his car for service. It pays well!
- 2. That's your chance** to check his car for burned-out or blackened bulbs, and other lighting defects.
- 3. Sell him new accessories**—fog lights, spot lights, backup units. It adds up fast!

FOR JUST \$2.50 you can get set to make real money with G-E Lighting Service. Call your G-E Auto Lamp supplier today and order your General Electric aiming screen. It comes with a copy of the new G-E Safety Lighting Service Manual and a big, colorful Lighting Service streamer—all for only \$2.50!

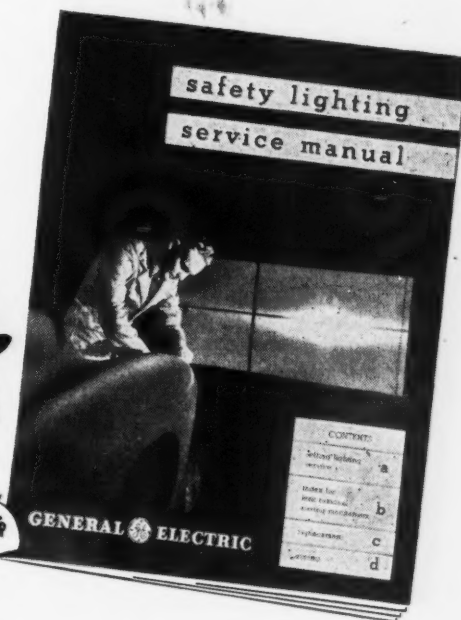


2 G-E LIGHTING SERVICE STREAMER. Bright yellow and blue, 34" x 19". Helps you sell Safety Lighting to more customers.

STOCK UP NOW!



THE BIG AFTER-DARK DRIVING SEASON IS JUST AHEAD. THAT MEANS MORE CUSTOMERS WILL WANT G-E SEALED BEAM LAMPS TO REPLACE BURNOUTS. HOW'S YOUR STOCK? YOUR G-E LAMP DISTRIBUTOR HAS THEM — CALL HIM TODAY.



3 SAFETY LIGHTING SERVICE MANUAL. Complete, up-to-date. Filled with "how to" facts and over 140 illustrations.

G-E LAMPS {

GENERAL  ELECTRIC

FOR EVERY SOCKET

... FOR EVERY CAR

When in DETROIT

Whether on business or pleasure, make this "Goodwill Hotel" your headquarters. Located right in the center of everything... a block east of Woodward Avenue on Elizabeth Street, overlooking Grand Circus Park, Hotel Wolverine is accessible to all sections of the city.

500 rooms... each with tub and shower. Good food. Ample parking space; garage service also available.

Home of THE TROPICS... most unusual night spot in Detroit. Romantic South Seas atmosphere.

HOTEL WOLVERINE
"The Goodwill Hotel"

RATES FROM
\$2.50 SINGLE • \$4.00 DOUBLE

WOLF'S HEAD
IS 3 STEPS AHEAD

WOLF'S HEAD
MOTOR OIL AND LUBES

100% PURE PENNSYLVANIA
P.G.C.O.A. Permit No. 6

WANTED DISTRIBUTORS

Some valuable territories open for organization, or man, to build a profitable business on exclusive item... Graph-Tex 303, in oil and gas... no other lubricant additive has ever been so successful... nationally advertised... testimonials from fleet, racing car, airplane, and car owners. Write for interesting proposal.

GREENLEAF CORPORATION
Penn Building, Pittsburgh 21, Penna.

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

Monmouth
TRADE MARK
is the name

Playboy Advertising Introduces Car

Playboy Motor Car Co., which is planning to produce a small lightweight low-cost automobile, has started its advertising campaign to introduce the car to the public. The company says that dealers and distributors are being appointed and that cars will soon be on display throughout the country. The advertising campaign includes full pages in national consumer magazines, trade publications and large newspaper ads in many markets throughout the country this fall.

Tucker to Make 25 Hand-Built Models

Although the sale of Tucker Corporation stock in late August had not progressed to the point where enough capital was available to meet the W.A.A. requirement of \$15 million capital assets, Preston Tucker, president, stated that 25 special models of the new Tucker car are being built and should be completed within 60 to 90 days. He said that the company has requested bids on dies needed for mass production indicating that 25 cars will be hand built.

Classified Advertisements

SALESMEN WANTED CALLING ON AUTOMOTIVE TRADES, DE LUXE SEAT COVERS, NEW STYLES, LOWEST QUANTITY PRICES. IMMEDIATE DELIVERIES, COMMISSION BASIS. KEYSTONE MFG. CO., 351-367 MARIETTA ST., N. W. ATLANTA 3, GA.

FOR SALE—Make an offer for one cylinder 1904 Brush Car in running condition. G. A. Levy, 320 N. 7th St., E. St. Louis, Ill.

WILLIAMS
SUPERBENCHES • SUPERSOCKETS

J. H. Williams & Co., Buffalo 7, N. Y.
"The Wrench People"



Smash-Proof

CREEPERS

Sold by all leading jobbers
HULBERT MANUFACTURING CO.
Ashtabula, O.

Ask about the

FOX

RAPID

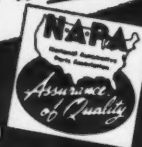
BATTERY CHARGER

FOX PRODUCTS COMPANY
PHILADELPHIA 41, PA.

FOR AUTOMOTIVE PARTS
AND SUPPLIES...

*Your NAPA Jobber
is a Good Man to Know!*

NAPA
Is the Largest
Independent Organization
in the Parts Industry



Genuine SERVICE
INDIANAPOLIS
"Measurably Better"
SPRINGS

SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA



VAN EXCHANGES
Since 1919

- STARTER DRIVES
- DISTRIBUTORS
- SHOCK ABSORBERS
- FUEL PUMPS
- UNIVERSAL JOINTS
- CURRENT REGULATORS
- WIPER MOTORS
- CARBURETORS

Sold thru leading jobbers. If your jobber can't supply you with VAN rebuilt parts write us and give his name.

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ATLANTA KANSAS CITY PHILADELPHIA

READY FOR SALES COMPETITION

...with a Visual Front



Large windows of L-O-F Plate Glass offer an eye-catching display of the new cars. The large bay permits a view of them from many angles.



New display rooms are being built all over the country as dealers brush up on their *visual* selling.

This attractive dealer establishment, designed by Architect Edward Fuller of North Kansas City, Missouri, is an excellent example. Day and night it displays new cars, parts and services. In presenting an open face to the public, it establishes this dealer as friendly, wide-awake, progressive.

There's nothing bizarre about a Visual Front. It's just a case of sound visual selling. It calls

attention to the merchandise and services for sale. Glass is a most enduring product...it doesn't need refinishing, keeps its original luster and attractiveness in spite of years of weathering. Water and a squeegee clean it when it's dirty.

Before you build or remodel, discuss the Visual Front with your architect. And write for our colorful Visual Fronts book. It's full of ideas you can use or adapt to your needs. Libbey-Owens-Ford Glass Company, 69107 Nicholas Building, Toledo 3, Ohio.



LIBBEY • OWENS • FORD
a Great Name in **GLASS**

Here's how to "Get the Breaks" in the



Automotive Service Business

YOU'VE heard people say, "So-and-so is sure lucky—he always gets the breaks." Nine times out of ten it's because he makes his own breaks. *And now is the time you can do just that in the automotive service business.*

United Motors Lines

Give You What It Takes

The next few years should be the biggest ever for parts and service—all surveys point that way. If you're going to take full advantage of this market, you'll want to expand your business on a sound, permanent foundation. That's what United Motors lines offer, because they're *original equipment on America's leading cars and trucks.*

Just Look 'Em Over

Delco-Remy Starting, Lighting and Ignition—
Delco Batteries—Delco Hydraulic Brakes—

Delco Radios—AC Fuel Pumps, Gauges and Speedometers — Delco Shock Absorbers — Guide Lamps—New Departure Ball Bearings — Klaxon Horns—Hyatt Roller Bearings—Harrison Radiators, Thermostats and Heaters — Inlite Brake Lining . . . *every one of these lines is an original-equipment leader!*

Continuing Demand—

Continuing Support

Whether you add one line or several, you know you're getting parts that meet a continuing demand for original-equipment-service. What's more, you can count on continued support from United Motors—*individually planned sales programs, up-to-date service information, consistent advertising in national magazines to back up your United Motors sign.* You build for "keeps" with United Motors lines.

Talk it over with your United Motors distributor—or write us direct.



UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION
GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

PERFORMANCE

PROTECTION

MOTORISTS NEED . . .

PROFITS YOU CAN USE

Here is the only Gasoline Strainer with the high-efficiency "Fiberite" Element . . . 100% non-abrasive, waterproof, acidproof and rustproof. It enables you to sell real performance protection.

The AC Gasoline Strainer prevents engine failure. It keeps gasoline clean and so prolongs the life of carburetor jets, needle valves and valve seats. It filters out dirt, lint, abrasives and water. It preserves easy starting and peak carburetor performance. It is easily installed.

And here's how easily you can cover the market:



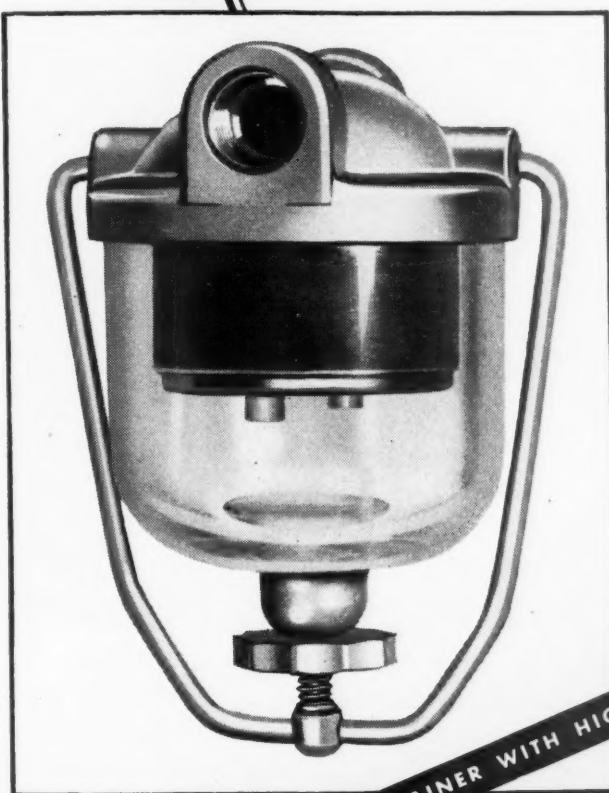
7 Complete Gasoline Strainer packages (containing all necessary fittings) cover all passenger car and light truck installations.

•

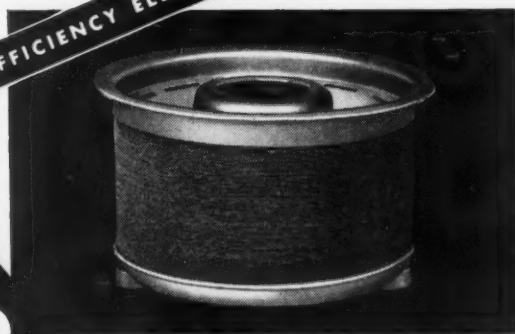


1 Additional Strainer package (containing all but special fittings) covers all other engine installations.

Sell this performance protection for extra profits. It has the added advantage of repeat business in Replacement Elements which are individually packaged for this purpose.



AC GASOLINE STRAINER WITH HIGH-EFFICIENCY ELEMENT



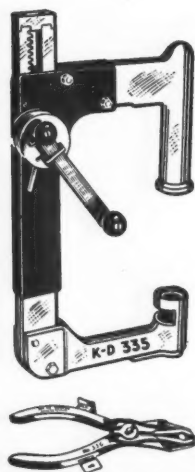
Gasoline
STRAINERS

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

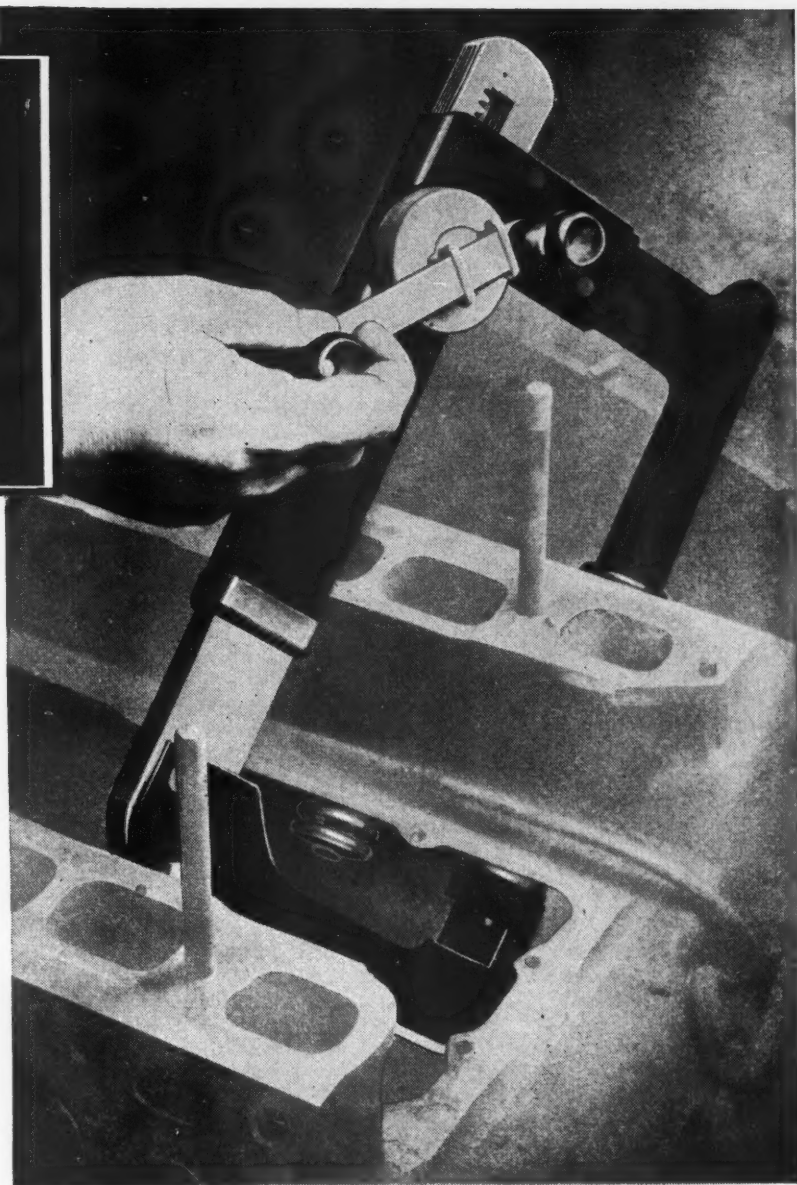
**Services all
Cadillac,
LaSalle V-8
since 1935**

**K-D No. 337
CADILLAC
COMPRESSOR SET**

With this set one mechanic can remove and replace all valves without walking from side to side. Unique brake provides positive locking at height desired. Sturdily constructed. Internal gear and rack for safety, power, durability. For a lifetime of normal use.



Set consists of
No. 335 Valve
Spring Com-
pressor, No. 336
Valve Keeper
Inserters.



The K-D 335 Compressor raising
a valve on a Cadillac V-8 motor

Centering pin on plunger bar automatically centers on valve. Turning handle raises spring, brake locks automatically when spring is at desired height. Retainers caught in well in lower jaw. Retainers replaced with 336 Inserters, entered thru lower jaw opening. Inserters self supporting on stem.

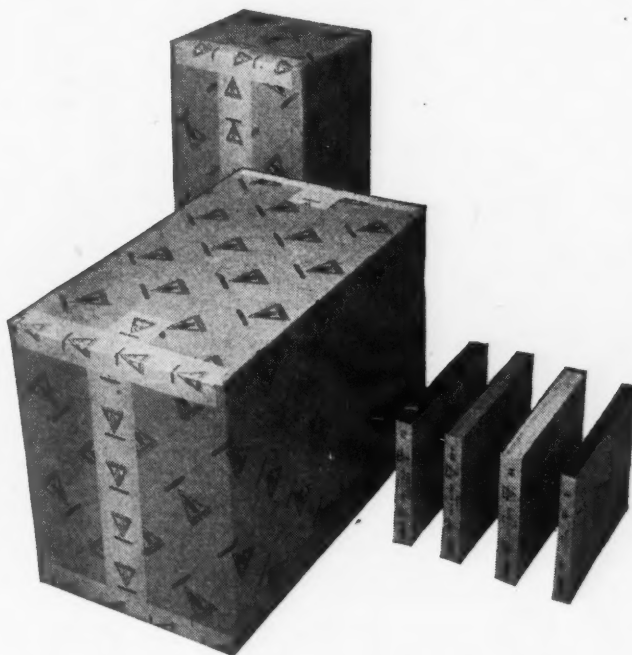
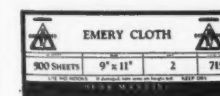
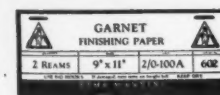
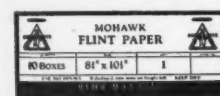
K-D MFG. CO., LANCASTER, PA., U.S.A.

K-D TOOLS - at Jobbers everywhere

announces

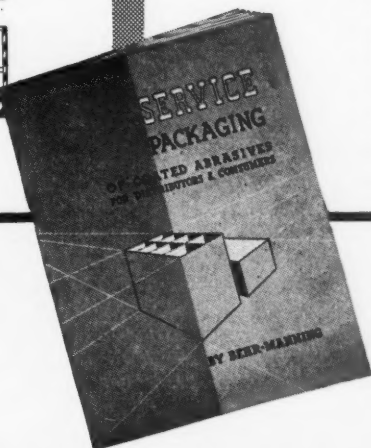
BEHR-MANNING SERVICE PACKAGING

to its Distributors & Consumers



After two and one-half years of research into the packaging recommendations of our distributors, dealers and consumers, Behr-Manning announces the Service Packaging of Coated Abrasives, effective January first.

Service Packaging provides standard master packages, standard component resale packages, brand recognition by colored labels, and line identification by wrapper design. Thus, Service Packaging brings to distributors, dealers and consumers a new convenience and economy in the buying, selling, handling and use of coated abrasives.



Write for your copy of this 24 page Book

Here is the complete story of Service Packaging, simply told, with photographs of the new packages, full color labels and simplified charts showing package quantities by product, form and size.

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Talk to

AUTOMOTIVE ENGINEERS

They're the men who have made Guide Sealed Beam units original equipment on more new cars, trucks and buses than any other make.



Talk to **CAR OWNERS**

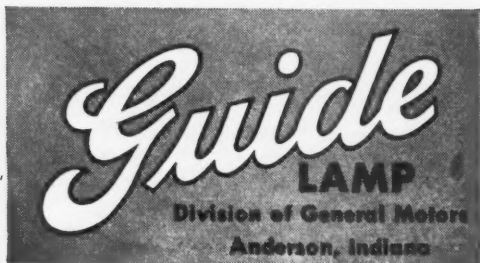
They go for the *double* protection of Guide Sealed Beam units . . . a long life with NO DIM-OUT—NO BLACK-OUT if a lens is cracked.



Talk to **SERVICEMEN**

They'll tell you that breakage is minimized and installation made easier by the sturdy metal reflector construction and locating lugs.

They all prefer...



Guide
**SEALED BEAM
HEADLAMP
UNITS**

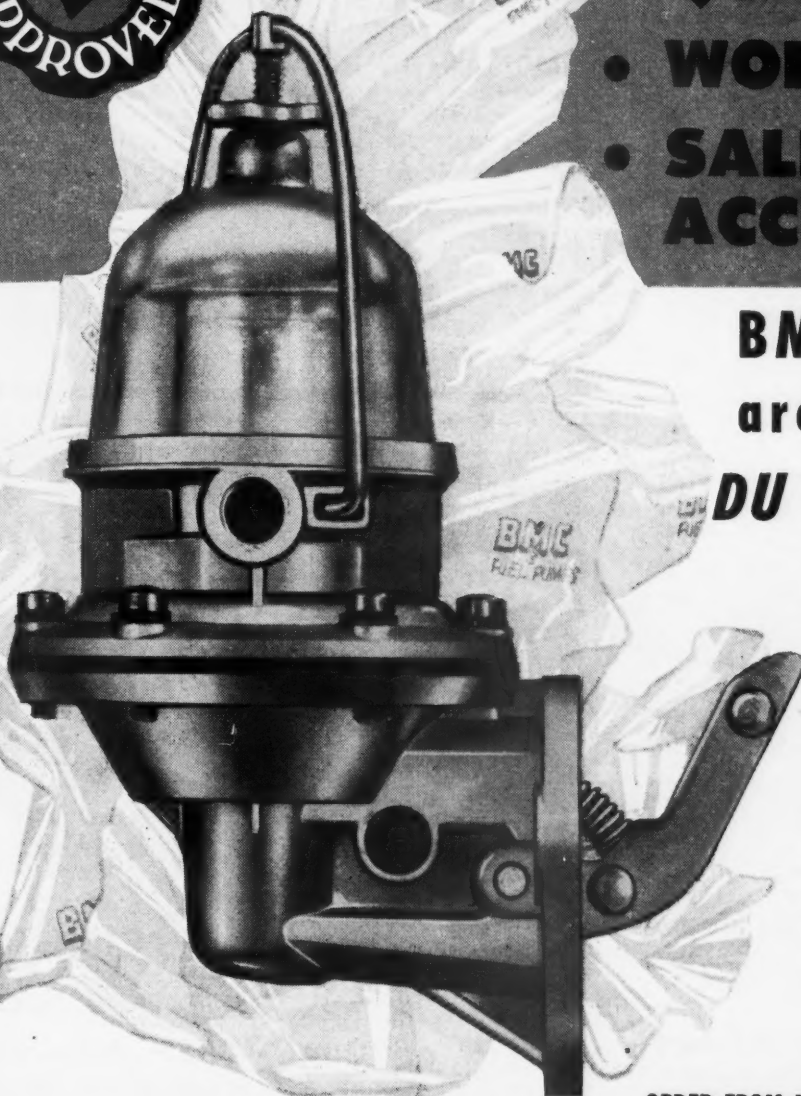
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Available Everywhere Through
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BMC FUEL PUMPS
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BMC combines the top quality feature of this fatigue-proof "Fairprene"* diaphragm plus heat-treated and plated moving parts to insure lasting wear.

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What other electric tool would permit you to ream $\frac{3}{16}$ " of metal from a steel plate held in your hand!

The amazing Ingersoll-Rand Impact Tool (the only universal electric rotary *Impact* Tool in the world) is easy to hold... you get no torque reaction—no kick—no twist—under any condition.

AMAZING!—Even if you stall the spindle completely the motor continues to run—no burned out motors when you use the I-R Impact Tool.

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AMAZING!—Delivery from stock... See your nearest Jobber or Distributor.

Reaming $\frac{1}{4}$ " to $\frac{3}{8}$ " in steel plate. f32 at 1/5000 sec. Electroflash action photograph.

Applies and removes nuts	Extracts broken cap screws and studs *
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Reams	Does hole saw work
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**NIEHOFF
HEADLIGHT RELAY**

Single or Dual Units Available

The NIEHOFF Headlight Relay increases headlight intensity as much as 50% because it reroutes the current over a much shorter path from battery to light. It reduces resistance in the circuit to a minimum. It overcomes poor results due to bad connections or undersize wiring. And, in addition, the fuse, held in tight clips, safeguards the entire circuit.

The NIEHOFF Relay is also readily adaptable to any accessory circuit to prevent voltage drop and burning out of contact points.

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BRANCH: 1342 S. Flower St., Los Angeles, Cal.

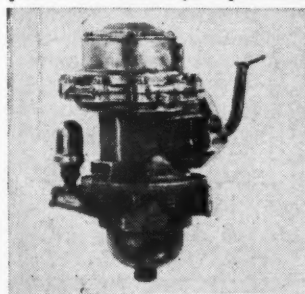
Magnus

Newsworthy Items for Those Concerned with
Industrial Cleaning and Related Problems

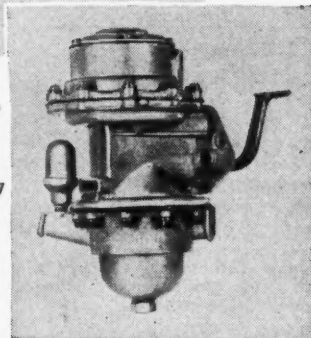
October, 1947

14 Carburetors Instead of 3 in 40 Minutes!

That's the kind of job you can expect from the Magnus Aja-Dip Jr. Cleaning Machine, with Magnus 755 as the cleaner. If you are cleaning carbonized parts in a still tank plus hand brushing, why not profit by the experience of users of this combination? They consistently report savings of 70% or more over hand methods. The photos show the kind of cleaning you get when #755 is put to work in an Aja-Dip Jr. Machine. Mind



Before
Cleaning



After
Cleaning

you—there's no hand work needed to get this kind of result on all parts with carbonized oil deposits, no matter how stubborn they may be with ordinary methods.

Is Your Automotive Cleaning Handbook NEW?

The Magnus Automotive Cleaning Handbook is such a useful tool in keeping your cleaning methods up-to-date, that you may be missing a lot of new ideas if you are depending on an old edition. The latest edition contains not only up-to-date data on cleaners and cleaning methods, but a complete outline of the use and utility of the various types of cleaning tanks and machines designed by Magnus to eliminate needless hand work, slow output and wasted man-hours in unnecessary supervision of cleaning jobs.

If your handbook is previous to the 21st edition, you had better write in for the new book!

Here Is the Perfect Cleaner for Steam Guns!

If you use steam guns for cleaning chassis and running gear—or any other automotive parts, Magnus 92K will do a far superior cleaning job than any other available steam gun cleaning compound.

First: It's a concentrated liquid, easy to make up in accurately proportioned solutions, instantly dispersed. No troubles with caking, lumping or soaking up water from the air. No unpleasant fumes or odors, either! And, because it's a liquid, you'll never have any more trouble with undissolved lumps of chemical getting into coils

NEW CLEANING IDEAS

For Further Details Write Magnus

New Magnus NXL for High Speed, Rubless Body Washing. Hundreds of shops before the war told us that Magnus NXL was the best body washer they'd ever used. Raw material shortages during the war prevented its manufacture. Now we've got an even better NXL for you. Spray or sponge on. Let soak. Rinse off. That's all for a perfect job! No. 43

If You Clean Engine Blocks in Any Volume investigate Magnus Machines and Cleaners for this job. There's a range of capacity and design in machines, plus Magnus Heavy Duty Cleaners, that'll meet your needs exactly, with faster, better cleaning and minimum labor requirements. No. 44

Drop 'Em In and Leave Them Be Till You Need Them! That's the fine thing about the Magnus Kol-Dip Tank. Put the parts you want to clean in the first tank. Take all except those with carbonized oil deposits out when you need them, rinse and use. On parts with carbonized oil, move to the small tank after a few minutes and leave them there till you need them. No heat required. No. 45

Magnus 55-P Is Back to Prewar Quality. We can get the fine quality materials now that made 55-P the outstanding cleaner for every job where deodorizing and sanitizing were wanted along with cleaning. Give it a try for rest rooms and toilets. No. 46

A Brand New, Better Magnus Hand Cleaner

If there's one field where Magnus Hand Cleaner is best known and liked, it's the automotive industry. And now we are glad to announce a greatly improved type of this old favorite material.

The new Magnus Hand Cleaner has a finer kind of scouring agent. It feels better on the hands and does an even faster cleaning job than the regular type. Its washing properties depend on a specially developed synthetic detergent, which is more effective than soap and rinses much more freely and thoroughly. More—this synthetic cleanser is not affected by hard water or even by sea water.

and nozzles. Second: 92K has no tendency toward forming deposits in the system which choke off operation. Third: 92K is a scientifically balanced alkaline cleaner, having no harmful effect on metals cleaned, and possessing excellent rinse-off properties. Cutting and suspending action on greasy dirt is fast and thorough.

Magnus 92K will give completely satisfactory service when used in any make of steam or vapor cleaning machine, such as the Hy-Pressure Jenny, Kerrick Kleaner, Circo-Cyclone, Ofeldt, Star, Eclipse, etc.

If you want faster, surer steam gun cleaning, without unpleasant fumes or troublesome storage or mixing problems, give Magnus 92K a good tryout. For heavy duty work, 94K is available.

Magnus Chemical Company, 174 South Avenue, Garwood, N. J. In Canada—Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que.



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LEAF SPRINGS

for

**Passenger Cars,
Trucks, Trailers
and Busses**

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and nearest distributor*

TRAINOR NATIONAL SPRING CO., INC.
New Castle, Indiana

You Will Agree . . .

. . . that a clean cooling system prevents overheating . . . that a clean cooling system is an essential aid to peak engine performance and economic operation of automotive equipment. And right now is a good time to give cooling systems a good clean-out . . . before you winterize cars with anti-freeze.

And for this clean-out job you will agree, too, that Oakite Penetrant is a good cleaning compound to use. For it quickly penetrates sludge . . . emulsifies it so that it drains out and leaves water passages free of obstruction.

Oakite Penetrant will do an equally good job of hot-tank degreasing of blocks and parts before overhaul. And if you steam-clean motors and chassis you will like the way Oakite Penetrant helps the steam blast off grease and muck. Ask us to mail you free descriptive folder.

OAKITE PRODUCTS, INC., 24C Thames St., NEW YORK 6, N. Y.
Technical Service Representatives in Principal Cities of U. S. & Canada

**MATERIALS
METHODS
SERVICE**

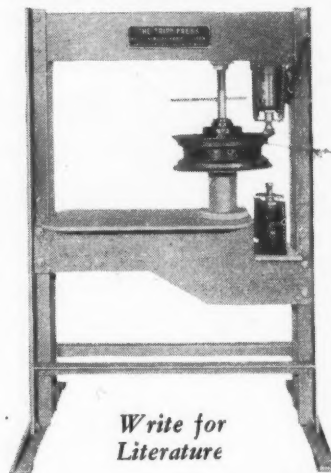
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WHEEL STRAIGHTENING! NOW AN EASY JOB!

ALSO HUB & DRUM STRAIGHTENING

Tripp Equipment enables you to do these jobs in your own shop—saving time and making extra profits. Most efficient method ever devised. Covers a wider range of jobs—wheels, hubs and drums. Disassembles and assembles Hub and Drum Assemblies.



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REMOVES

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plus sturdy die-cast brackets...

GIVE Thomson LIGHTS GREATER DURABILITY . . . LONGER LIFE

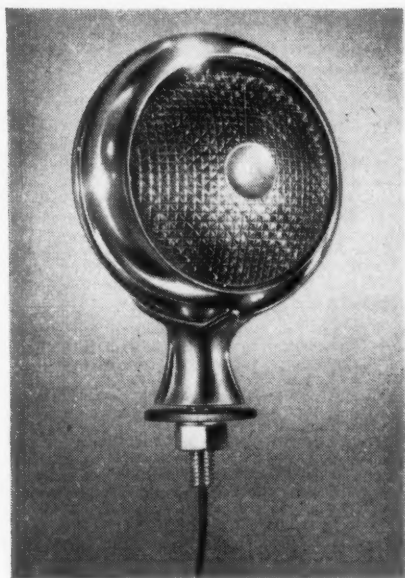
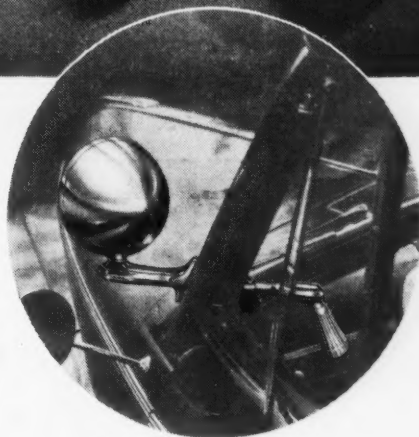
Thomson "Pistol Grip"

SPOTLIGHT

Strong beam penetrates far beyond the range of car, truck or bus headlights. Spots bad curves, narrow bridges, dangerous holes, ditches, also street signs, house numbers. Unsurpassed driving aid and safety feature. Beautiful. Trouble-free. Long-lasting. Universal bracket fits all cars. This light is an exceptional profit item for you.



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- ★ Concentrated Beam
- ★ Dual Swing Action
- ★ All-Weather Chrome Finish
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This powerful back-up light spots all obstructions and warns other cars and pedestrians. Sturdy checkered glass lens diffuses light to cover large area so turns can be made safely. Four-inch overall diameter. Uses 6 volt, 21 candle power bulb. Wire enters through stud. Available singly or in pairs. Another unbeatable profit item for you.

- | | |
|-----------------------------|---------------------------|
| ★ "Spread Beam" Lens | ★ Easily Installed |
| ★ Light Covers Large Area | ★ Smartly Styled |
| ★ All-Weather Chrome Finish | ★ Furnished with 10' Cord |

Jobbers: Write for catalog sheets; details; prices.

Standard-Thomson Corporation, Dayton 2, Ohio, U. S. A.

**IT'S NEW!
IT'S BETTER!
IT'S FASTER!**

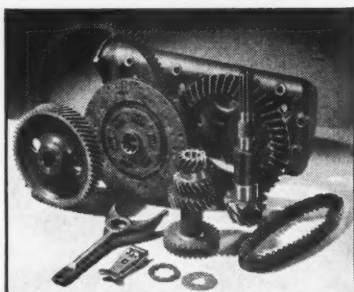


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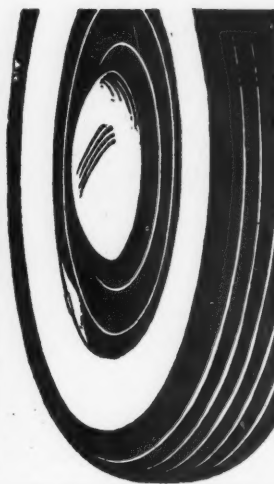
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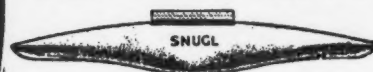
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AUTOMOTIVE**

WHEEL BALANCE WEIGHTS

TRUCKS • BUSES • PASS. CARS



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HOSE CLAMP CARTON
WAS DESIGNED
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NEW and POWER-
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360° WIRE HOSE CLAMP with the
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A PERFECT valve grinding job can't give efficient engine performance unless all valve springs function properly.
Insure every motor overhaul job by checking spring tension with

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For VALVE and CLUTCH SPRINGS

Used in production and recommended for service work by leading manufacturers of automobile, airplane, truck and tractor motors.

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Range up to
250 lbs.
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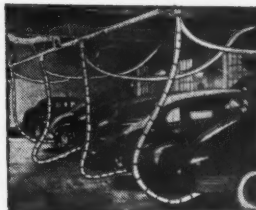
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COMPLETE PACKAGED KIT
\$18750 F.O.B.
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What you have been waiting for—the final successful solution to your garage ventilation problem. All available in a packaged kit, ready to install.

- Removes gas fumes at source (exhaust pipe).
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- Not in your way—Instantly in use or out of way when you don't need it.
- Saves man-hours and helps keep employees. Mechanics have less sinus, headaches, etc. Write for Circular



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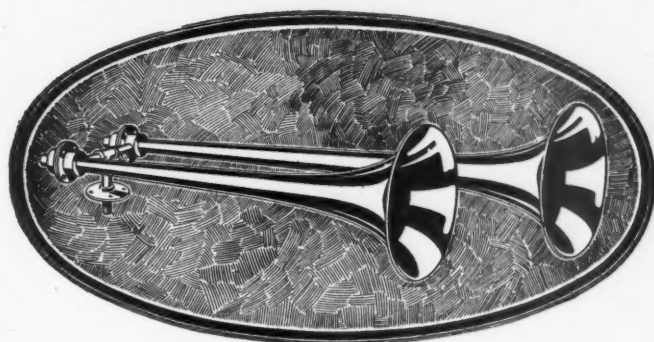


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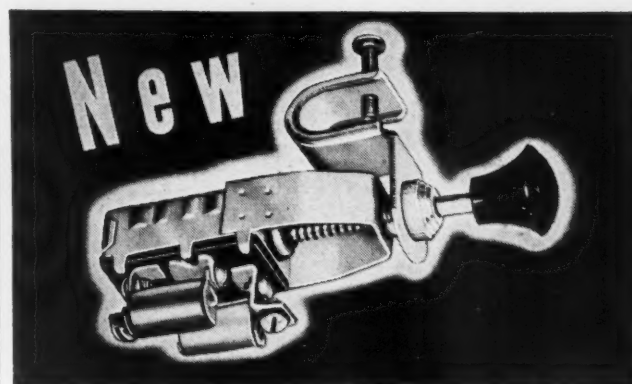


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STYLED RIGHT



White sidewall tires, as illustrated, available at extra cost.

for what's ahead

CONSIDER, for a moment, just what is ahead when a buyer puts his name down for a Buick.

There are weeks and months and years of fun in the step-lively lift of his big Fireball straight-eight.

There's smooth and level going wherever his paths may lead, over boulevards, or over bad roads tamed by his easy-going coil springs — on all four wheels.

There's plenty of good company in a car big enough to take the crowd, and to give elbow room for six on its three-person seats.

There's long life and durability in a stout chassis and rugged underpinning built big and brawny. There's light handling for the lady of the household and there's size

enough to satisfy the most masterful masculinity.

There's fun and satisfaction and pride from the moment one is his through many a long year; now see how the *looks* of this beauty fit with all that.

Plainly, no car on the roads today so clearly bears the mark of tomorrow in its styling.

Plainly, no other car is so enduringly smart in the sleekness of its

lines, the sweep of its follow-through fenders, the broad-beamed, meant-for-business garb this one wears so proudly.

Whatever the future brings, there's no surer way he can be certain he'll be traveling in the newest of the new than to put his money on Buick.

Considering all these things, it's small wonder that Buick stands alone as America's "most wanted" automobile.

ONLY BUICK HAS ALL THESE *STAR FEATURES*

When better
automobiles are built
BUICK
will build them

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- ★ SILENT ZONE BODY MOUNTINGS ★ SAFETY-RIDE RIMS
- ★ ACCURITE CYLINDER BORING ★ FLITEWEIGHT PISTONS
- ★ BUICOIL SPRINGING ★ FULL-LENGTH TORQUE-TUBE DRIVE
- ★ PERMI-FIRM STEERING ★ CURL-AROUND BUMPERS
- ★ STEPON PARKING BRAKE ★ DEEPFLEX SEAT CUSHIONS
- ★ TEN SMART MODELS ★ BODY BY FISHER

Tune in HENRY J. TAYLOR,
Mutual Network, Mondays and Fridays

BUICK DIVISION OF GENERAL MOTORS

*You can use them with
Confidence Because...*

AC REBUILT FUEL PUMPS ARE REALLY REBUILT

—NOT MERELY REPAIRED!

You can use and recommend AC rebuilt fuel pumps with complete confidence in their uniform quality and dependability. *For each pump carries a new-pump warranty!*

You can be sure of a ready supply, too. For to serve the automotive trade better, United Motors is maintaining 19 big rebuilding operations in strategic locations throughout the country.

Here, under the supervision of rebuilding specialists, the pumps are completely disassembled and thoroughly reconditioned and rebuilt on regular factory production lines using factory tools and methods. All worn or substandard parts are discarded. And, in every case, certain vital parts, such as the diaphragm, are replaced with new, original-equipment parts!

Every completed pump must pass rigid inspections and tests proving that it meets factory specifications . . . and that it is qualified for a new-pump warranty.



AC rebuilt fuel pumps are sold in all trading areas on an exchange basis by United Motors Service distributors.

UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION
GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN



as *Announced in*

THE SATURDAY EVENING
POST

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are now

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Their **SERVICE**
OPERATIONS
on this
NEW PLAN...

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You are organized to *make more money!*

You are organized to *cash in* on the economy and extra effectiveness of *advertising all four engine services at one time.*

You are organized to *tie in* with the National Advertising of the Ramco Method of RE-POWERING Service.

Have you qualified your station to display the RE-POWERING Sign? See your Ramco Jobber or write Ramco today.

The illustration depicts a brick building with a large sign that reads "RAMCO RE-POWERING SERVICE". A circular sign above the entrance also says "RAMCO RE-POWERING SERVICE". Two vertical signs on either side of the entrance repeat the name. A vintage car is parked in front of the shop. A man and a woman are standing in front of the car, looking at it. In the foreground, three tilted boxes contain the text: "More FUN", "More ECONOMY", and "More DEPENDABILITY". Below the main sign, it says "FOR CAR OWNERS... a new SIGN that spells...".

THE RAMSEY CORPORATION, ST. LOUIS, MO., makers of 10-Up Piston Rings
and a complete line of piston rings for all automotive and industrial
requirements. Factories: St. Louis, Missouri; Fruitport, Michigan; Toronto, Ontario, Canada.

SHE HAS TO TAKE CHANCES...



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can play **SAFE!**

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STEEL EDGE for quick, positive oil control for passenger cars.

*VAN DER HORST PROCESS

American Hammered Piston Rings

